

PL VM
New Text Document.txt

12 January 1998

This paper was downloaded from the Internet.

Distribution Statement A: Approved for public release;
distribution is unlimited.

POC: CDR Richard Myer
DSN 680-6433

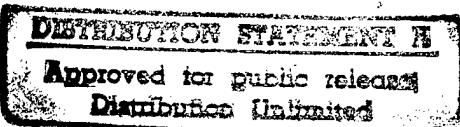
Aug 15, 1997

19980114 072

Joint Simulation System



Concept of Operations



DTIC QUALITY INSPECTED 3

Version 1.0 (15 August 1997)

Comments or inquiries regarding this document may be addressed to:

**Concepts Division
Joint Warfighting Center
Fenwick Rd., Bldg. 96
Fort Monroe, VA 23651-5000
Attn: CDR Richard Myer, USN**

Phone (757) 726-6419/6559 (DSN 680-xxxx)
Fax (757) 726-6433 (DSN 680-6433)
E-mail: myerr@jwfc.js.mil

Table of Contents

1. Scope	1
1.1 JSIMS Identification.....	1
1.2. JSIMS Overview.....	1
1.2.1. General Capabilities	2
1.2.2. Simulation Environment	3
1.2.3. JSIMS Cooperative Development.....	4
1.2.4. Phased Deployment.....	5
1.2.5. Other JSIMS Uses.....	5
1.3. JSIMS CONOPS Overview	5
2. References.....	7
3. JSIMS Operating Capabilities.....	9
3.1. General JSIMS Capabilities	9
3.2. Operational Policies and Constraints	9
3.3. JSIMS Description at IOC	10
3.3.1. The Universal Joint Task List (UJTL).....	11
3.3.2. The Joint Training System.....	13
3.3.3. Joint Exercise Support	14
3.3.3.1. Exercise Design Stage.....	15
3.3.3.2. Exercise Planning Stage	16
3.3.3.3. Exercise Preparation Stage.....	17
3.3.3.4. Exercise Execution Stage	19
3.3.3.5. Post-Exercise and Assessment Stage.....	20
3.3.3.6. JSIMS Joint Exercise Life Cycle (JELC) Support.....	21
3.3.4. Joint Exercise Scenario Support	22
3.3.5. JSIMS Operational Scenarios at IOC.....	23
3.3.6. JSIMS Employment at IOC	24
3.3.7. Land Domain at IOC.....	25

3.3.8. Maritime Domain at IOC.....	25
3.3.9. Air and Space Domain at IOC.....	25
3.3.10. Intelligence Support at IOC	26
3.3.11. Logistics Support at IOC	26
4. Phased Implementation of JSIMS.....	28
4.1. JSIMS Version 1.1.....	28
4.2. JSIMS Version 1.2.....	29
4.3. JSIMS Version 1.3.....	29
4.4. JSIMS Introduction of Joint and Service Requirements.....	30
4.4.1 JSIMS Introduction of Joint Use Minimum Capabilities.....	31
4.4.2. JSIMS Introduction of ARMY Use Minimum Capabilities.....	32
4.4.3. JSIMS Introduction of AIR FORCE Use Minimum Capabilities.....	33
4.4.4. JSIMS Introduction of NAVY Use Minimum Capabilities.....	33
4.4.5. JSIMS Introduction of MARINE CORPS Use Minimum Capabilities.....	34
4.4.6. JSIMS Introduction of Other Use Minimum Capabilities	34
5. Concept for JSIMS at FOC and Beyond	36
5.1. Mature JSIMS Capabilities	36
5.1.1. JSIMS Training Scenario Support at FOC	36
5.1.2. Joint Simulations Replaced by JSIMS by FOC	37
5.1.3. JSIMS Support of Other Functions at FOC.....	37
6. JSIMS Scenarios.....	39
6.1. Exercise Design Role	39
6.1.1. Joint Exercise Control Group	39
6.1.2. Joint Exercise Player - Response Cells	40
6.1.3. Supporting CINC Roles	41
6.1.4. JSIMS Technical Control and System Support.....	42
6.1.5. JSIMS Opposing Forces Support.....	42
6.2. Conceptual Development Scenarios	42

6.2.1. Operational Representations.....	43
6.2.1.1. Linkage to UJTL, JMETL, JUCL and SSS.....	43
6.2.2. Role in Verification, Validation and Accreditation.....	43
6.2.2.1. Validation Utility -- Improved Exercise Design	44
6.2.3. Scenario Tools -- Vignette Building Blocks	44
6.3. Development Scenarios - Initial Focus.....	44
6.3.1. Southwest Asia Major Theater War.....	44
6.3.1.1. Focus and Sufficiency	45
6.3.1.2. A CINC/JTF Mission.....	45
6.3.1.3. Build Toward the IOC Event.....	45
6.3.2. Follow-on MOOTW Development Scenario	45
6.3.2.1. Forces and Level of Refinement.	46
6.3.2.2. Unique Capabilities	46
6.3.2.3. Environmental Conditions	46
6.3.2.4. MOOTW in JSIMS Events - Progressive Automation	46
6.3.3. Academic Seminar Scenario.....	46
6.3.3.1. Environmental Conditions	47
6.3.3.2. Forces and Level of Refinement	47
6.3.3.3. Unique Capabilities	47
6.3.4. Academic Seminar Events.....	47
6.4. JSIMS Scenarios at FOC	47
6.4.1. Expanded Capabilities.....	48
6.4.2. FOC Expectations	48
6.5. JSIMS Operational Scenario Design.....	49
6.6. JSIMS Operational Scenario Structure	49
6.6.1. User Templates	49
6.7. Partitions by Stage of Operations.....	50
6.7.1. Prehostilities/Predeployment Stage	51

6.7.2. Lodgment Stage	51
6.7.3. Decisive Combat/Mission Execution and Stabilization Phase.....	51
6.7.4. Follow-through Phase	51
6.7.5. Posthostilities/Mission Closure and Redeployment Phase	52
6.8. Summary	52
7. Summary of Impacts.....	52
7.1. Operational Impacts	52
7.2. Organizational Impacts.....	53
7.3. Impacts During Development.....	53
8. Analysis of JSIMS	54
8.1. Advantages of JSIMS.....	54
8.2. JSIMS Disadvantages/Limitations.....	55
8.3. Alternatives and Trade-Offs	56
ANNEX A – JSIMS Development Scenario.....	57
A.1. Background.....	57
A.2. Political-Military and Geographic Setting - Focused and Sufficient	57
A.3. Development Scenario.....	57
A.3.1. Middle East MTW Training Audience.....	58
A.3.2. Middle East MTW Training Audience - Organizational Relationships.....	58
A.4. JSIMS Training Objectives for Initial Development.....	59
A.4.1. Scenario Task Conditions	67
A.5. World Situation.....	69
A.5.1. The Iranian and Gulf Crisis	70
A.5.1.1. Background.....	70
A.5.1.2. Sociological/Economic Factors	70
A.5.1.3. Demographics of Resistance.....	70
A.5.1.4. Regime Agenda - Retain Power	70
A.5.1.5. Regional Military Action	71

A.5.1.6. International Shipping Provocations	71
A.6. Scenario Events.....	72
A.6.1. Escalation - Stages One Through Four	72
A.6.1.1. Stage One.....	72
A.6.1.2. Stage Two.....	73
A.6.1.3. Stage Three	73
A.6.1.4. Stage Four	74
A.7. Operational Situation	75
A.7.1. Background.....	75
A.7.2. Theater Objectives.....	75
A.7.3. Mission Statement	76
A.7.4. Concept of Operations	76
A.7.5. Command and Control.....	78
A.7.6 Force Allocation	78
A.8. Military Operations Other Than War (MOOTW)	79
A.8.1. Background.....	79
A.8.2. Factors Affecting Mission Execution	79
A.8.3. MOOTW Development Scenario Summary	79
A.9. Academic Seminar Training Scenario.....	80
A.10. Conclusion	80
References:	80
Sources:	80
Annex B -- JSIMS Development Scenario Force Structure	81
B.1. General	81
Appendix (1) to Annex B: U.S. Forces	81
B.A1.1. In Place Forces - Major Theater War - Persian Gulf	81
Army Forces.....	81
Air Forces.....	81

Naval Forces	81
Coast Guard Forces:.....	82
B.A1.2. Allocated for Planning - Persian Gulf Region	82
CINC/CENTCOM Staff:	82
Army Forces:.....	82
Air Forces:.....	83
Navy Forces:	84
Coast Guard Forces:.....	85
Marine Corps Forces:.....	85
Special Operations Forces (SOF):.....	87
Appendix (2) to Annex B: Combined/Coalition Forces.....	88
B.A2.1. SAUDI ARABIA	88
B.A2.1.1. Saudi Land Forces	88
B.A2.1.2. Saudi Air Forces:.....	88
B.A2.1.3. Saudi Navy Forces:	88
B.A2.2. KUWAIT.....	89
B.A2.2.1. Kuwaiti Land Forces:	89
B.A2.2.2. Kuwaiti Air Forces:.....	89
B.A2.3. EGYPT:	89
B.A2.3.1. Egyptian Land Forces:.....	89
B.A2.3.2. Egyptian Air Forces:	90
B.A2.4. GULF STATES (BAHRAIN, QATAR, UAE, OMAN).....	90
B.A2.4.1. Gulf States Land Forces:.....	90
B.A2.4.2. Gulf States Air Forces:	90
B.A2.4.3. Gulf States Navy:.....	90
Appendix (3) to Annex B: Opposing Forces Order of Battle	91
B.A3.1. IRAN	91
B.A3.1.1. Land Forces:.....	91

Joint Simulation System Concept of Operations (v 1.0)

B.A3.1.2. Air Forces:	91
B.A3.1.3. Navy Forces:	92
B.A3.1.4. Iranian Missile Forces:.....	92

Table of Figures

FIGURE 1.0 -- JSIMS DOMAIN INTEGRATION.....	4
FIGURE 3.1 -- UNIVERSAL JOINT TASK LIST.....	11
FIGURE 3.2 -- MILITARY PLANNING & EXECUTION ACTIVITIES	12
FIGURE 3.3 -- JOINT TRAINING SYSTEM	13
FIGURE 3.4 -- TRAINING AUDIENCE EXERCISE ENVIRONMENT	14
FIGURE 3.5 -- JOINT EXERCISE LIFE CYCLE	15
FIGURE 3.6 -- JELC DESIGN STAGE	16
FIGURE 3.7 -- JELC PLANNING STAGE	17
FIGURE 3.8 -- JELC PREPARATION STAGE.....	18
FIGURE 3.9 -- JELC EXECUTION STAGE	20
FIGURE 3.10 -- JELC POST EXERCISE AND ASSESSMENT STAGE	21
FIGURE 3.11 -- JSIMS TRAINING ENVIRONMENT	24
FIGURE 4.1 -- JSIMS VERSIONS.....	28
FIGURE 4.2 -- MEETING EVOLVING REQUIREMENTS	30
FIGURE 4.3 -- SEQUENTIAL INTRODUCTION OF JOINT USE CAPABILITIES	32
FIGURE 4.4 -- SEQUENTIA' INTRODUCTION OF ARMY USE CAPABILITIES.....	32
FIGURE 4.5 -- EQUENTIAL INTRODUCTION OF AIR FORCE USE CAPABILITIES.....	33
FIGURE 4.6 -- SEQUENTIAL INTRODUCTION OF NAVY USE CAPABILITIES	34
FIGURE 4.7 -- SEQUENTIAL INTRODUCTION OF MARINE CORPS USE CAPABILITIES	34
FIGURE 4.8 -- SEQUENTIAL INTRODUCTION OF OTHER USE CAPABILITIES	35
FIGURE 6.1 -- CINC AND JTF TRAINING AUDIENCE AND RESPONSE CELLS.....	40
FIGURE 6.2 -- JSIMS SUPPORTING CINC FUNCTIONALITY.....	42
FIGURE A.1 -- CINC AND JTF TRAINING AUDIENCE	58
FIGURE A.2 -- CINC/JTF FUNCTIONAL AND SERVICE ORGANIZATION.....	59
FIGURE A.3 -- UJTL DEFINITION OF TERMS	60

1. Scope

1.1 JSIMS Identification

The Joint Simulation System (JSIMS) will provide readily available, operationally valid, computer-simulated environments for use by the CINCs, their components, other joint organizations, and the Services to train, educate, develop doctrine and tactics, formulate and assess operational plans, assess warfighting situations, define operational requirements, and provide operational input to the acquisition process. This Concept of Operations (CONOPS) addresses how JSIMS will support joint, Service, and other agency training, education, doctrine development and mission rehearsal. This CONOPS focuses on joint training. Service specific training needs from JSIMS are addressed in WARSIM, NASM, and JSIMS Maritime Concepts of Operations. Education and mission rehearsal for joint, Service, and other agency audiences are included as support applications for JSIMS, but they will be addressed in greater detail in follow-on editions of the JSIMS CONOPS. The objective of JSIMS is the creation of a comprehensive set of training, education and mission rehearsal tools. JSIMS will be developed from requirements provided by joint, Service and other agency users. JSIMS will incorporate new technology to enhance the realism of training while simultaneously reducing the need for dedicated training resources. Because JSIMS is a new system designed to replace a number of current simulations and intended for use by a broad audience, this CONOPS will articulate a user-oriented description of how JSIMS will be used. To mitigate development risks and satisfy immediate users' needs, JSIMS will be fielded in progressively more capable versions. This edition of the CONOPS will detail JSIMS use at Initial Operating Capability, but only outline out-year use applications. This document was prepared by the Joint Warfighting Center in accordance with the Data Item Description (DID) DI-IPSC-81430 and incorporates information from other documents such as the Mission Needs Statement (MNS) and Operational Requirements Document (ORD). The JSIMS CONOPS is a living document and will be updated periodically to support changes in training, requirements, or policy.

1.2. JSIMS Overview

US national military strategy is shaped by the dynamic, global interests of the US in the post-cold war era. US military force levels, structure, and doctrine continually respond to new global engagement requirements as they evolve. The effectiveness of these responses is directly related to the training that precedes them. Realistic and relevant training is an essential component of creating and maintaining readiness. Training brings its own set of challenges mirroring many of the broader challenges of national military strategy. These training challenges stem from several sources:

- Joint and multinational character of contemporary military activities.
- Numerous, nontraditional applications of military power.
- Requirement for rapid planning, rehearsal, and response to contingency operations.

- The need to improve efficiency and effectiveness in training.

Increased reliance on synthetic training environments can satisfy many of the training and education responses to these challenges. However, the existing modeling and simulation (M&S) tools, such as the Joint Training Confederation (JTC), are not suited to current challenges. In 1993, the Services began to define a process for shared cooperative development of a follow-on to the JTC. After significant effort, the Services agreed to begin the development of JSIMS, a single, seamlessly integrated simulation environment.

JSIMS will be the primary M&S tool to support future joint and Service training, education, and mission rehearsal. At initial operational capability (IOC), JSIMS will focus on training joint force commanders (commanders of unified commands and prospective joint task force commanders) and staffs, and principal subordinate Service and functional component commanders and staffs) in operational and strategic-theater joint tasks. JSIMS will be progressively developed into a robust, interactive joint synthetic battlespace (JSB) for training strategic-national joint tasks and joint and Service tactical tasks in all phases of operations (mobilization, deployment, employment, sustainment, and redeployment). At full operational capability (FOC), JSIMS will have a comprehensive capability to satisfy a full range of training, education, doctrine development and mission rehearsal needs. The JSIMS JSB will also be used to support other training and preparation for military activity as identified in the National Military Strategy and Joint Publication 3-07.

1.2.1. General Capabilities

JSIMS will satisfy a broad set of requirements for training, education, mission rehearsal, and doctrine development. The initial objectives for the JSIMS program addressed an extremely broad set of requirements. The emphasis was on establishing broad goals for what the Services desired in JSIMS and how they would work together to sustain the program. Subsequently, the JSIMS Mission Needs Statement (MNS) provided a more formal definition of the deficiencies of the current M&S supporting joint and Service training and established the need for JSIMS. The MNS described JSIMS in terms of desires for general capabilities. The ORD supports the MNS and sets forth requirements of the user. A Functional Requirements Document (FRD) was developed to clarify and expand the ORD. This CONOPS addresses how the users will employ the capabilities described in these documents.

The JSIMS MNS describes deficiencies in the current simulation systems used by combatant commanders for training their commands. The initial goal for the JSIMS program will be to provide a replacement for the current Aggregate Level Simulation Protocol (ALSP)-based Joint Training Confederation (JTC). The primary target audience for ALSP was the joint force commander (JFC), and JSIMS will incorporate all the functionality necessary to fulfill JFC training requirements. The JTC also provided capabilities to support Service and multi-component training requirements, albeit at significant costs in planning and preparation time, personnel, and other resources.

JSIMS is not merely a replacement for the ALSP JTC; it will contain capabilities currently omitted in the JTC and, therefore, be far more realistic and efficient in the JFC

training environment. JSIMS capability at IOC may be constrained by current technology, but it will be designed to incorporate emerging technology and improve as later versions are fielded, exceeding the current capability and including support for Service and professional military education (PME) uses. JSIMS capabilities to support user requirements for version 1.0 at IOC are spelled out in Section 3; Section 4 describes sequential introduction of capabilities in versions 1.1-1.3; and Section 5 addresses JSIMS capabilities incorporated to fulfill all user requirements at FOC with version 2.0.

1.2.2. Simulation Environment

The JSIMS simulation environment, in contrast to the JTC, will provide an integrated representation of the battlespace domains. In addition to integrating land, maritime, and air/space domains, JSIMS will encompass other linked capabilities, such as transportation, logistics, intelligence, C4, special operations, and information operations. The JSIMS core will include common and joint representations and simulation Services, a run-time hardware and software infrastructure and interfaces. JSIMS efficiency, composability, and tailorability will allow it to represent tertiary domains when JSIMS is used for focused Service, functional, and mission rehearsal training and education. High Level Architecture (HLA) will enable JSIMS to exchange data with other systems such as weapons platform simulators.

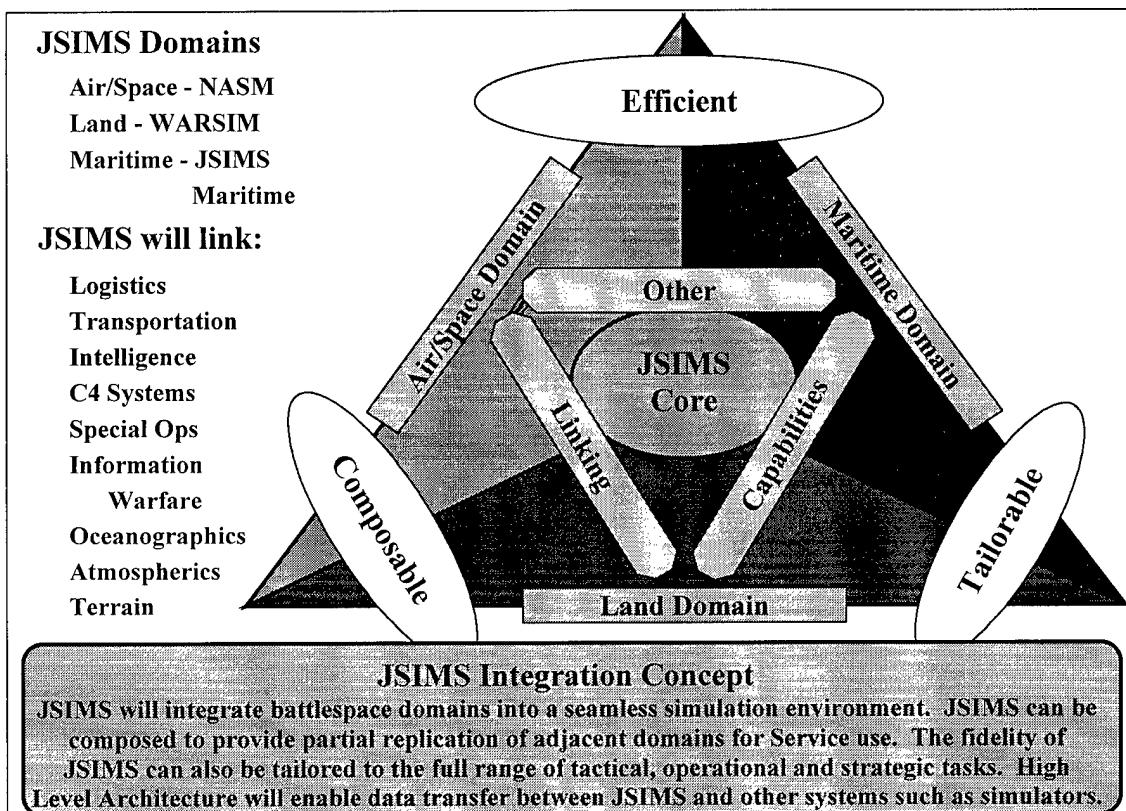


Figure 1.0 -- JSIMS Domain Integration

1.2.3. JSIMS Cooperative Development

JSIMS is a joint program with cooperative Service support. Incorporating Service developed domains and components will foster efficiencies in both development and employment of the system. JSIMS will be developed within an evolutionary life-cycle to support an initial operational capability (IOC) in 1999 and full operational capability (FOC) in 2003. JSIMS development will be cooperatively supported by officially designated Executive Agents (EA) and Development Agents (DAs) from the Army, Air Force, and Navy for each warfare domain (land, air/space, and maritime). In addition, EAs from the Defense Intelligence Agency (DIA), Defense Information Systems Agency (DISA), U.S. Transportation Command (USTRANSCOM), and U.S. Special Operations Command (USSOCOM) represent, respectively, the functional areas of U.S. intelligence and opposing forces representation, C4, and special operations. The three Modeling and Simulation Executive Agents (MSEAs) for the natural, physical environment (i.e., terrain, ocean, and atmosphere and space) will provide technical expertise for the development of a seamless, integrated synthetic environment for JSIMS. The Joint Warfighting Center (JWFC) is the user advocate for the program and acts as the single clearinghouse for all JSIMS functional and operational requirements.

Cooperative development and the JSIMS core infrastructure, developed by the JSIMS JPO, will also enhance Service training. The JSIMS program will provide a mechanism

for shared, cooperative development of models and simulations (M&S) by the Services (Army, Navy, Air Force, and Marines). Products from the JSIMS program should support and enhance individual Service training. As an example, the JSIMS program will enable the Army to use a simulation of a flying platform developed by the Air Force to simulate a helicopter to support Army training. Shared development will have two major benefits. The first is that cooperative development will shape the creation of the JSIMS Joint Conceptual Model of the Mission Space (JCMMS). This will describe the types of interactions to be modeled by JSIMS prior to a heavy investment in software resources. Thus, the Services will agree, prior to building software, on what needs to be built and how it should be built to support both joint and Service training. The second benefit is that the JSIMS program will reduce duplication of effort. JSIMS will provide the Services a formal process for distributing the extensive effort of building the joint operations aspects of warfare that must be included in the model, regardless of the Service use.

1.2.4. Phased Deployment

To ensure comprehensive and cooperative development of JSIMS, a coordinated, phased deployment of JSIMS will be implemented, beginning with initial operational capability (IOC) in 1999, through full operational capability (FOC) in 2003. At IOC, JSIMS will provide a realistic and efficient training environment and, although JSIMS capability at IOC may be constrained by current technology, it will improve as later versions are fielded.

Initial JSIMS deployment sites are addressed in the JSIMS Transition Plan. The order of deployment will be prioritized by user needs. For the purposes of this CONOPS, the first joint training site is assumed to be either the JTASC or JWFC. JSIMS management issues are addressed in the JSIMS Enterprise Management Plan.

1.2.5. Other JSIMS Uses

The JSIMS program will also provide products that could support other users. JSIMS will be built to comply with Department of Defense (DOD) standards for M&S such as the High-Level Architecture (HLA), the Conceptual Model of the Mission Space (CMMS), and the data standardization program. This will enable other communities to avail themselves of the JSIMS software to support their programs.

1.3. JSIMS CONOPS Overview

This CONOPS serves two purposes. First, it presents concepts about how JSIMS will be employed by the users. Second, the CONOPS is intended to stimulate the development and refinement of the JSIMS Operational Requirements Document (ORD) over the life cycle of the program. Successive editions of the CONOPS will address changes required in the program and provide increasing detail on JSIMS capabilities for versions 1.1-2.0. The information presented in this CONOPS will be:

- Stated in terms of how JSIMS supports the Joint Training System.
- Articulated from the users' perspectives.

- Useful as a guide to JSIMS developers.
- Updated on a periodic basis to reflect changes in concepts or policy.

This CONOPS works within the structure laid out by the MNS, but describes JSIMS in terms of how commanders, staffs, and units will use JSIMS within the Joint Training System. As a formal program document, sponsored and approved by the user community, the CONOPS provides a common point of reference for the Services and others to use in describing ideas about the future employment of JSIMS program products to include the initial capability. The CONOPS draws from and should remain consistent with training strategy documents produced by the combatant commands and the Services. The CONOPS reflects current and emerging doctrine as well as capabilities of command, control, communications, computers, and intelligence (C4I) systems. The CONOPS must also remain consistent with the evolving concepts from the JSIMS Joint Program Office (JPO) concerning the products to be delivered. Finally, the CONOPS provides a framework for transforming the needs defined in the MNS and the requirements identified in the ORD/FRD into a useful product for the JPO to use in the development phase.

The CONOPS plays an important role in the continual updating of the JSIMS program. At the beginning of the JSIMS acquisition program, the approved MNS established the need for a new system. As a living document over the program life-cycle, the JSIMS ORD enumerates specific capability requirements to meet the MNS-identified needs. Each time the ORD is updated, it provides the Program Manager (PM) a checklist for determining what products to buy or build along with a set of standards for assessing the worthiness of the final products. By formalizing descriptions of JSIMS and its uses in an operational setting, the CONOPS provides a means for identifying new requirements for the ORD and provides a reference document for refining the requirements and standards already identified into a prioritized listing for the developers.

This CONOPS discusses the JSIMS program from several areas of interest for future use. Section 3.0 of the CONOPS provides an overview of future joint training. This synopsis outlines the underlying policies and future joint training system driving the requirements for JSIMS. Sections 3.0-5.0 describe JSIMS program products in terms of basic blocks of capabilities to be used by developers, commanders, staffs, or units. In Section 6 scenarios for JSIMS employment are discussed. The strict adherence of JSIMS products to DOD standards should facilitate their use by organizations other than training units. Sections 7 and 8 summarize the impacts and advantages of JSIMS and discuss training issues that must be considered during the transition of JSIMS from IOC, through the introduction of sequential versions of the system, to version 2.0 at FOC. Due consideration must be given to these issues to ensure no degradation in readiness that might result from gaps in training as a result of transition effects.

2. References

The JSIMS program has three types of supporting references: General, Management, and Requirements. General documents describe policies and requirements for the training environment that JSIMS will support. Management documents outline the JSIMS program and its management structure. Requirements documents provide formal statements from the intended user community describing the desired capabilities for JSIMS.

General

Joint Doctrine Capstone and Keystone Primer

Joint Training Policy for the Armed Forces of the United States, Chairman of the Joint Chiefs of Staff Instruction (CJSCI) 3500.01

Joint Training Master Plan 1998, CJSCI 3500.02

Joint Training Manual, Chairman Joint Chiefs of Staff Manual (CJSCM) 3500.03, 1 June 1996

Universal Joint Task List, CJSCM 3500.04A version 3.0, 13 September 1996

Naval Doctrine Command, "Naval Tactical Task List", Version 1.1, 30 September 1996

U.S. Army Training and Doctrine Command, "DA PAM 11-XX, Army Universal Task List," 14 March 1996

U.S. Air Force Task List at the Tactical Level of War, 4 April 1997

Armed Forces Staff College Pub 1, The Joint Staff Officer's Guide, 1997

Management

MOA between the Joint Warfare System (JWARS) Office and the JSIMS Joint Program Office, 18 December 1996

MOA between the Joint Warfighting Center and The JSIMS Joint Program Office, 17 March 1997

Joint MOA for the Joint Simulation System, 13 December 1996

JSIMS Executive Agent Charter, Draft 25 July 1997

JSIMS Enterprise Management Plan, Draft 20 June 1997

Requirements

JROCSM 080-94, 20 July 1994

JSIMS Functional Requirements Document (FRD), 20 November 1996

JSIMS Mission Needs Statement (MNS), 20 July 1994

JSIMS Operational Requirements Document (ORD), Version 2.7, (in distribution for JROC approval), 18 June 1997

JSIMS Verification, Validation and Accreditation Plan, Version 2.0, 1 July 1997

JSIMS Universal Capabilities List, 16 June 1997

3.

JSIMS Operating Capabilities

This section begins with a general description of JSIMS required operational capabilities, policies and constraints. The operating context of JSIMS is derived from a discussion of several joint training vehicles, including the Joint Training System, the Universal Joint Task List, and the Joint Exercise Life Cycle.

3.1. General JSIMS Capabilities

JSIMS will be a comprehensive tool to satisfy many uses. JSIMS includes a core infrastructure and mission space objects maintained in a common repository. The objects can be composed to create a simulation capability to support joint or Service training, mission rehearsal, or education objectives. The Mission Needs Statement (MNS) prescribes the following capabilities:

- Incorporation of simulations across the full range of military operations including: land, sea, air, space, and special operations; associated functions such as logistics, transportation, intelligence, medical, engineering, communications, and electronic warfare; and geospatial, meteorological, oceanographic, and environmental factors.
- Incorporation of simulation of social, economic, and political factors, which affect, or are affected by, missions across the entire range of military operations.
- Tailored displays of simulation results on C4I (command, control, communications, computers, and intelligence) systems or their emulation for training and exercises, or on computer workstations for analysis.
- Distributed and remote computer processing for users characterized by interoperable elements located at many dispersed sites.
- Flexibility to accommodate different functional applications and levels of detail within those applications (e.g., tactical, operational, and strategic levels of warfare for training and exercise).
- Linkage of live, constructive, and virtual forces to form an environment that stimulates a user's C4I systems.
- Accelerated development of data/knowledge bases and the creation of semi-autonomous forces to reduce exercise overhead and allow for crisis rehearsals.

3.2. Operational Policies and Constraints

The training concepts resident in this CONOPS conform with joint training methodologies incorporated in the CJCS Joint Training Manual (CJCSM 3500.03). They reflect user concepts for JSIMS support of the four phases of the joint training

system and include specifically employment of JSIMS across the implementation of the joint exercise life cycle (JELC).

JSIMS must comply with DOD standardization and interoperability policies for modeling and simulation, including: the DOD Technical Reference Model (TRM) part of the Technical Architecture Framework for Information Management (TAFIM); the Defense Modeling and Simulation Office (DMSO) High Level Architecture Management Plan; Modeling and Simulation Resource Repository; DMSO Conceptual Model of the Mission Space Management Plan; and the DOD Modeling and Simulation Master Plan. These policies include the directive that the JSIMS core infrastructure and constituent components meet requirements for verification, validation, and accreditation (VV&A). All of these requirements apply to JSIMS at IOC. V&V will be accomplished for the data, objects, and process developed for IOC in accordance with the JSIMS VV&A Plan.

At IOC, the JSIMS design will facilitate achieving FOC goals. The system will adhere to DOD Corporate Information Management (CIM) guidance for managing automated information systems. Reliability and maintainability will be IOC considerations. Elements of JSIMS will be engineered to interface with C4I systems. JSIMS design will be capable of interfacing with the DOD Intelligence Information Systems (DODIIS)/Joint Worldwide Intelligence Communications System (JWICS) and will adhere to other emerging C4I standards, such as those advocated in *C4I For the Warrior*. JSIMS will comply with DOD security requirements and take advantage of existing programs. The JSIMS system design will accommodate automated multilevel security systems (MLS) when they become available.

Elements of the IOC system requiring terrain data will be compatible with NIMA products and geospatial data. JSIMS design will anticipate decreased manpower availability. Therefore, design objectives include more efficient automated simulation support functions such as exercise design, database building, and simulation control.

3.3. JSIMS Description at IOC

This portion of the CONOPS describes how JSIMS will be used at IOC. At IOC, JSIMS will begin to replace JTC in supporting joint and Service training events. The joint training system (JTS) establishes joint training requirements from the perspective of a joint force commander, usually a geographic or functional CINC. This section of the CONOPS describes how JSIMS will be used within the JTS. A detailed description of overall JSIMS desired capabilities is contained in the JSIMS Operational Requirements Document. The section begins with a short description of the Universal Joint Task List and its relationship to the levels of war, echelons of command, and military planning and execution activities. The JTS is then outlined to describe how JSIMS can support the training requirements of a joint force commander (JFC). It then presents a typical training audience and concludes with a description of the joint exercise life cycle (JELC) - an ordered sequence of processes, products, events, decision points and activities used to design, plan, prepare, and execute exercises and fulfill post-exercise and assessment requirements. Other uses of JSIMS and post IOC improvements are presented, but in less detail.

3.3.1. The Universal Joint Task List (UJTL)

The Universal Joint Task List (UJTL) is one tool used to communicate joint mission tasks. Since JSIMS will be used to train and rehearse joint mission tasks, the structure of the UJTL drives the operational use of JSIMS. The UJTL describes three levels of war: strategic, operational and tactical. To each of the levels, the UJTL assigns a number of tasks. In addition, the UJTL differentiates between strategic tasks performed at the national level and those performed at the theater level. Therefore, in the UJTL, military activities are modeled in a four-tiered hierarchical taxonomy. Figure 3.1 depicts the levels as a pyramid, with the tactical level as the base followed in turn by the operational, strategic-theater, and strategic-national levels. Although there is no direct link between echelon of command and levels of war, certain echelons tend to emphasize and operate within particular levels and therefore focus on corresponding levels of UJTL tasks.

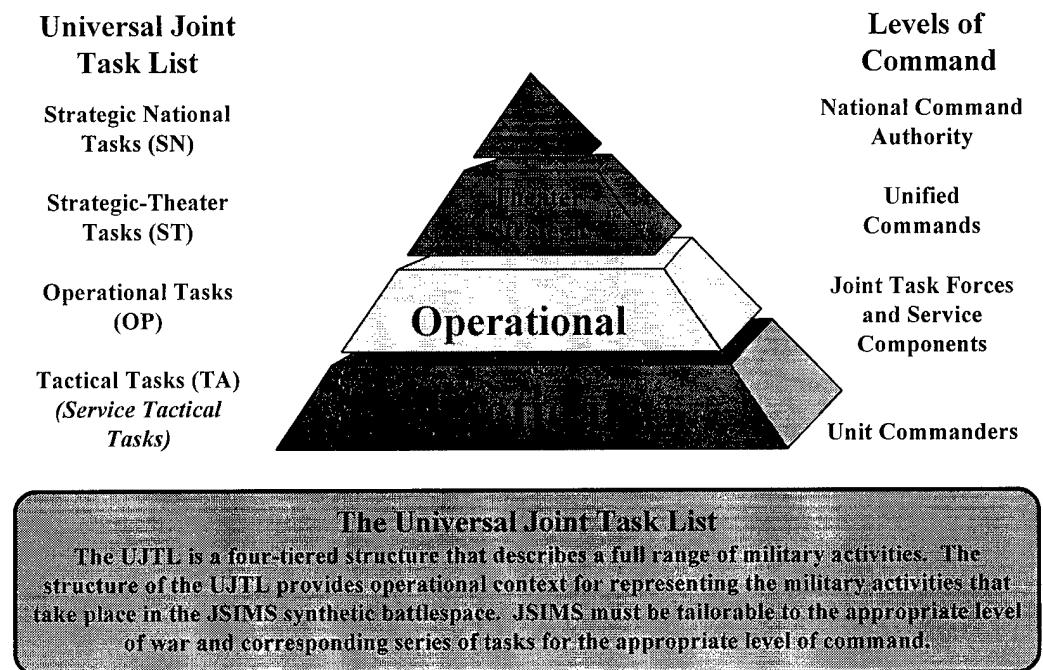


Figure 3.1 -- Universal Joint Task List

The UJTL contains a comprehensive listing of tasks that can be performed by a joint military force. Services Tactical Task Lists (TTLs) are being developed and integrated into the UJTL structure. The UJTL also contains a common language of conditions to provide context for tasks. In addition the UJTL contains a menu of measures that can be used to develop standards of performance for accomplishing a joint mission. The application of specific conditions and standards to a given task is the responsibility of the joint force commander.

The four levels can also describe both military planning and execution processes, as depicted in Figure 3.2. Of central importance are the joint force commanders (JFCs).

JFCs include the commanders in chief (CINCs) of the Unified Commands, joint task force (JTF) commanders, and other commanders authorized to exercise combatant command or operational control over a joint force. CINCs have broad and continuing missions derived from the Joint Strategic Capabilities Plan (JSCP) or other national-level guidance. A JTF commander, in contrast, usually has a single, focused mission of relatively short duration. Joint functional commanders have responsibilities focused on a specific area and usually report to a JTF commander or a CINC. Similarly, JTF and functional commanders often operate under a regional CINC. CINCs and JTF commanders usually direct subordinate Service component commanders.

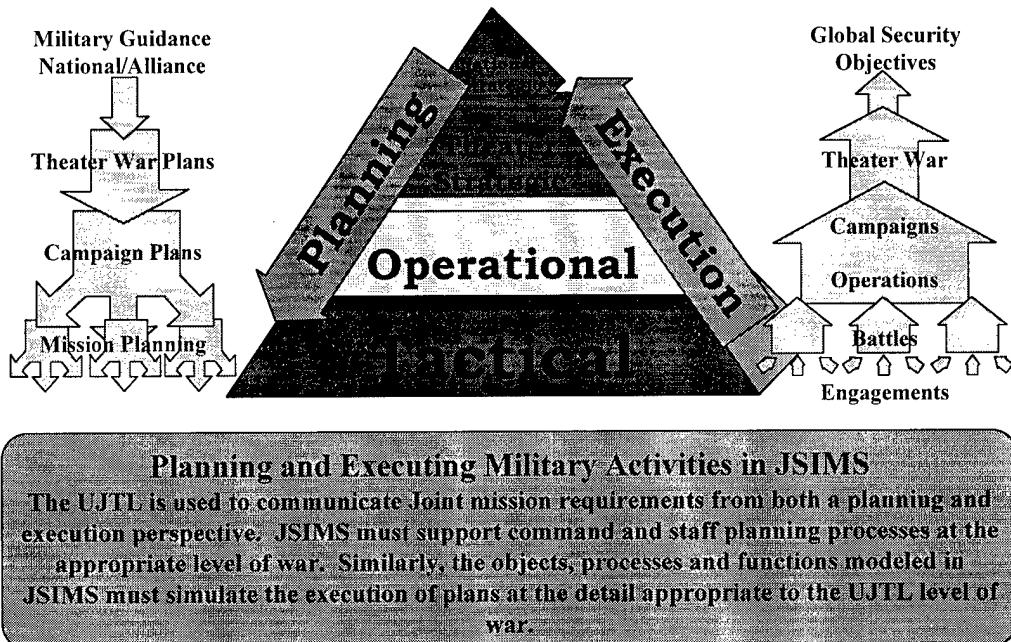


Figure 3.2 -- Military Planning & Execution Activities

Joint commanders, whether a CINC, JTF or functional commander, use the UJTL to analyze their respective missions. In planning or preparing for joint missions, numerous joint tasks must be successfully performed, but some are more important than others. Tasks that are essential to the success of the mission become Joint Mission Essential Tasks (JMETS). When combined, the essential tasks become the Joint Mission Essential Task List (JMETL). The JMETL, therefore, will usually be less comprehensive than the UJTL. The significant difference, though, is not size. It is the addition of specific conditions and standards that apply to performance of the tasks. Service component commanders also use the UJTL, supplemented by Service Tactical Task Lists in a similar mission analysis process. The JMETL process is a key activity in the Joint Training System.

JSIMS will be developed to support incorporation of learning methodologies into the JSB. The *events based approach to training* (EBAT) provides a structured approach for planning, preparing, executing, and assessing training. This approach supports the joint training system, the joint exercise life cycle, and the UJTL. Outputs of this approach will be used by the Joint Exercise Management Package (JEMP) software.

3.3.2. The Joint Training System

While the UJTL structure can be used by commanders at nearly any echelon, the Joint Training System (JTS) is focused at the Unified Command level because CINCs are required to develop Joint Training Plans (JTPs). The CINCs' JTPs, in turn, will then be used by subordinate JTF, functional, and Service component commanders to shape their respective training. Schedule extracts from the CINCs' JTPs are consolidated and published in the CJCS Joint Training Master Schedule (JTMS). At IOC, JSIMS will support CINC training needs using exercises identified in the JTMS as candidates for initial JSIMS-supported training events, and Service training events described in respective Service Training Plans.

The JTS is a four-phase approach to derivation and fulfillment of joint training requirements based on required mission capabilities. In Phase I, the JMETL is derived from mission capability analyses. In Phase II, the JMETL is used to shape the JTP. During Phase III, the specific training events in the JTP are executed and evaluated. Phase IV of the JTS synthesizes evaluations from multiple training events with the commander's assessment of JMETL proficiency. Although JEMP will link JSIMS to all phases of the JTS, JSIMS development focuses on JTS Phase I and III.

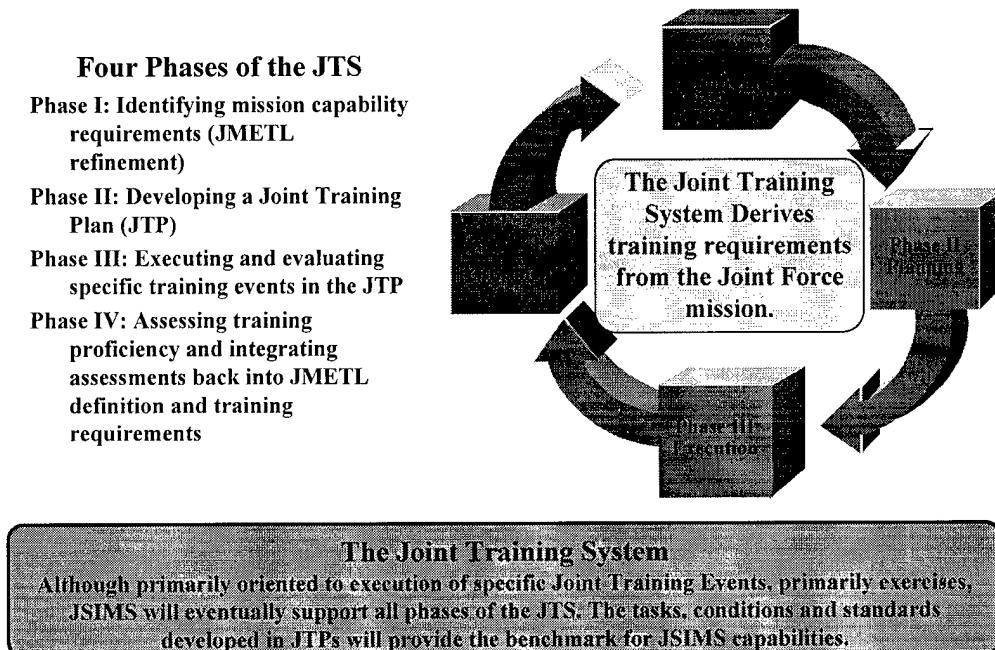


Figure 3.3 -- Joint Training System

The JTP derived in Phase I defines specific training events and training audiences. joint training exercises are but one of several types of training events. Figure 3.4 depicts a typical training audience in a joint training exercise. As JSIMS matures, the composable, tailorable, and efficient attributes will enable support of other types of events and audiences.

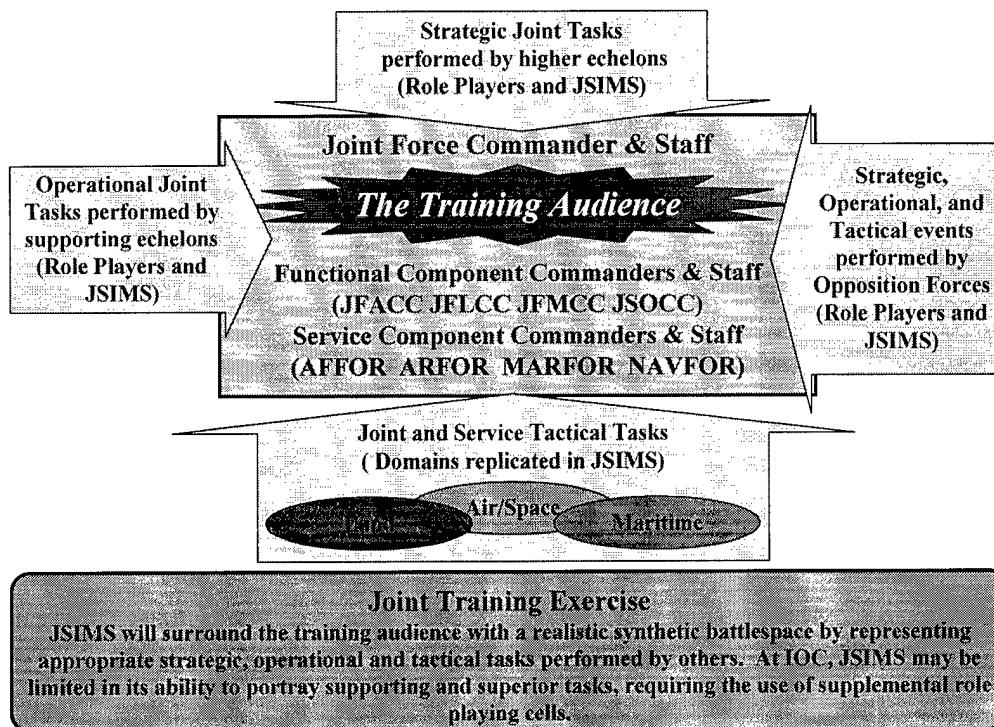


Figure 3.4 -- Training Audience Exercise Environment

3.3.3. Joint Exercise Support

During the design and planning of a JSIMS-supported event, composability and tailorability attributes will be essential in providing a relevant training experience to the training audience. Using tools embedded in JSIMS and other training systems support tools, such as JEMP, the exercise planning team will tailor the JSIMS event to the specific, detailed training needs of the exercise sponsor. These detailed requirements will include: the particular learning methodology to be supported; specific training objectives; the command and control processes that must be enabled; measurement and collection of training audience performance; and the format for presenting results.

The exercise planning team will then compose the technical structure of the JSIMS event by relying on the distributed resources and characteristics of the system. For example, they will be able to create scenarios and supporting databases by accessing the information in the common Modeling and Simulation Resource Repository (M&SRR).

As with some legacy systems, JSIMS will be able to support exercises in which the training audience and associated response cells operate in geographically distributed mode. However, JSIMS will also have the ability to support exercises that have links with other distributed, HLA-compliant mission training systems such as manned aircraft simulators.

Joint training exercises are best defined within the context of the joint exercise life cycle (JELC) (*See Figure 3.5*), which is laid out in stages. Those stages include exercise design, planning, preparation, execution, and post exercise.

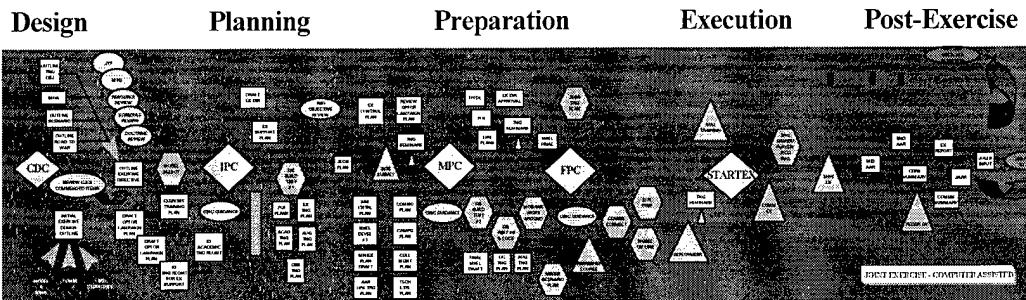


Figure 3.5 -- Joint Exercise Life Cycle

3.3.3.1. Exercise Design Stage

The exercise design stage of the JELC is critically important in training audience identification, exercise goals and training objectives definition, and scenario concept development. Much of the work in the design stage occurs in association with the Concept Development Conference (CDC). Based on the CINC's Joint Training Plan (JTP) and the joint force commander's guidance, exercise sponsor representatives and other CDC attendees develop a clear mission statement and purpose, a list of selected JMETs for the event from the CINC's JMETL, a good outline of exercise and training objectives, an exercise scenario concept, and a clear view of the training audience make-up. This enables refinement of the training objectives, from which all subsequent design and planning flows.

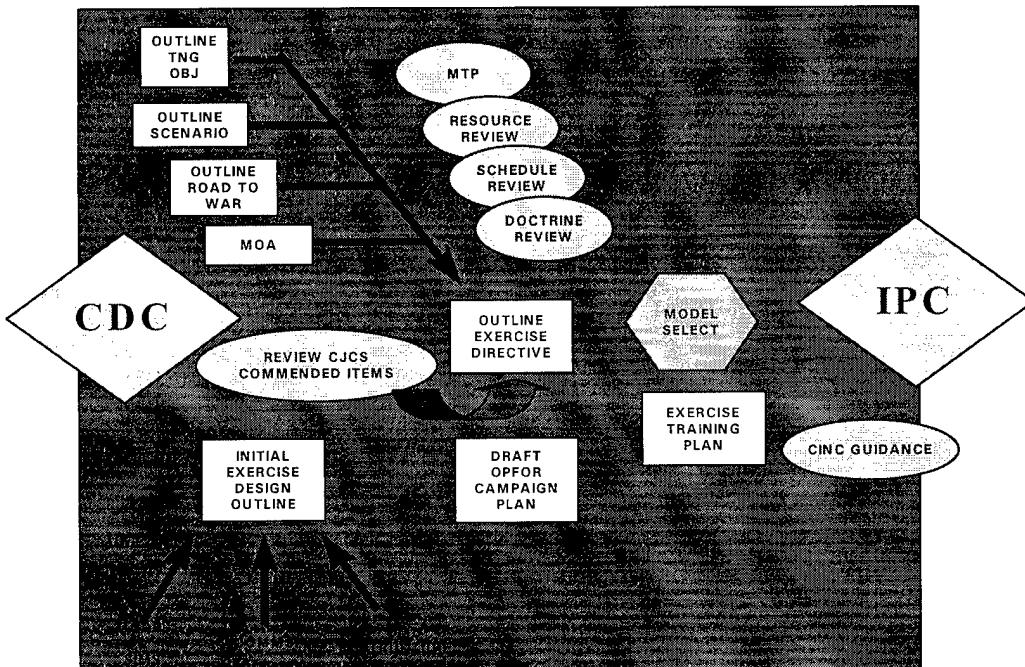


Figure 3.6 -- JELC Design Stage

During this stage a review of associated joint publications and the Chairman's Commended Training Issues (CCTIs) is conducted to ensure compliance with training guidance and established joint doctrine in the design of the event.

With training objectives established, it is possible, through an analytical process, to select an appropriate simulation. Currently this is frequently one of the legacy simulations or a combination of simulations, as are resident in the Joint Training Confederation (JTC), although none is particularly well-suited for some contemporary training events.

It is anticipated that the introduction of JSIMS at IOC will moderate some of the difficulties associated with exercise design and planning, and full implementation of the transition plan through FOC will eliminate many of the problems and greatly simplify many of the processes embodied in the JELC.

The efficiencies expected from JSIMS in terms of time, effort, and personnel resource reductions are anticipated to reduce associated budgetary costs, as well as to expand the bounds of exercise design parameters available to exercise planners.

3.3.3.2. Exercise Planning Stage

The planning stage commences with the initial planning conference (IPC), the primary focus of which is the draft Exercise Directive. This document may be in a number of different formats – a military message, OPORD format with annexes, or letter of instruction (LOI) but, in any case, it lays out exercise design, planning, funding, resource, and support responsibilities. During the IPC, with the joint force commander's guidance, final decisions are made on exercise design and parameters and, from the critical outline documents previously accomplished, detailed work commences on the required draft products. The simulation selection is validated; logistics requirements are identified and refined; exercise milestones are validated; and database requirements are outlined.

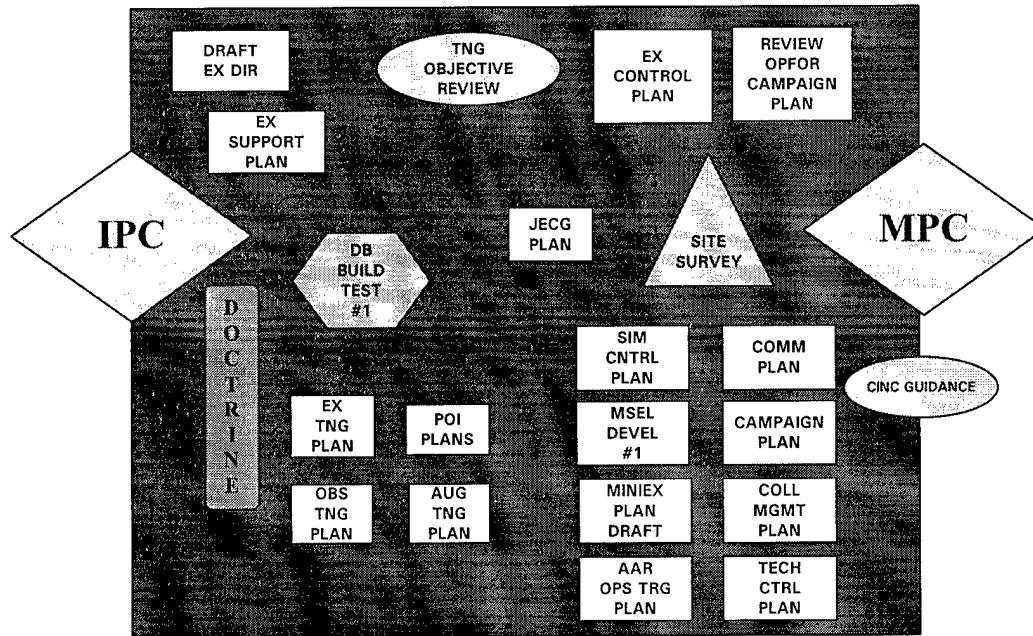


Figure 3.7 -- JELC Planning Stage

In the planning stage, between the IPC and mid-planning conference (MPC), most of the work is done on exercise design and support documents development, including: joint exercise control group (JECG) architecture development, exercise control plan, and JECG training plan; exercise academic training plan; AAR operations concept, collection management and observer training plans; OPFOR campaign plan; communications engineering plan, simulation control plan, technical control plan, and mini-ex plan. Also during this stage, the Master Scenario Events List (MSEL) is drafted. Additionally, major work must be accomplished in simulation support environment development, simulation database development, simulation environment configuration, and simulation technical control planning. The major simulation database work is accomplished, including initial database loading and database test #1.

After JSIMS IOC, the time, effort, and personnel resources required to perform a major part of the simulation-related tasks (i.e., database loading and testing) are expected to be reduced significantly. Also, the availability of JSIMS products as planning tools is envisioned to streamline some non-simulation related planning tasks as well (e.g., AAR operations concept and collection management plans development, exercise control architecture and control plans development).

3.3.3.3. Exercise Preparation Stage

The preparation stage of the JELC commences with the mid- or main planning conference (MPC). Primary MPC activities include reviewing all the work done to date, particularly the documents prepared since the IPC, including the draft MSEL, various control plans, adjusted milestones, manning requirements for the control organization, and firming-up dates and procedures for the next two database tests. During the preparation stage, the final MSEL draft is submitted for approval, all training plans are finalized in preparation for execution, and a MINIEX scenario is developed. Also during

this stage, two time-phased force deployment lists (TPFDL) are developed -- one to cover the deployment of personnel and equipment to the exercise site and the other, a scenario TPFDL that sets the stage for blue forces' presence in the exercise scenario. This scenario TPFDL is populated with real world blue force data, forming the scenario time phased force deployment database (TPFDD), and the core of the simulation BLUFOR database. Additional database work is accomplished; including completion of all exercise sides and factions, terrain, and environmental databases; and conducting database tests #2 & #3. All databases are locked, model/simulation workarounds are developed and published, and M&S refresher training is conducted.

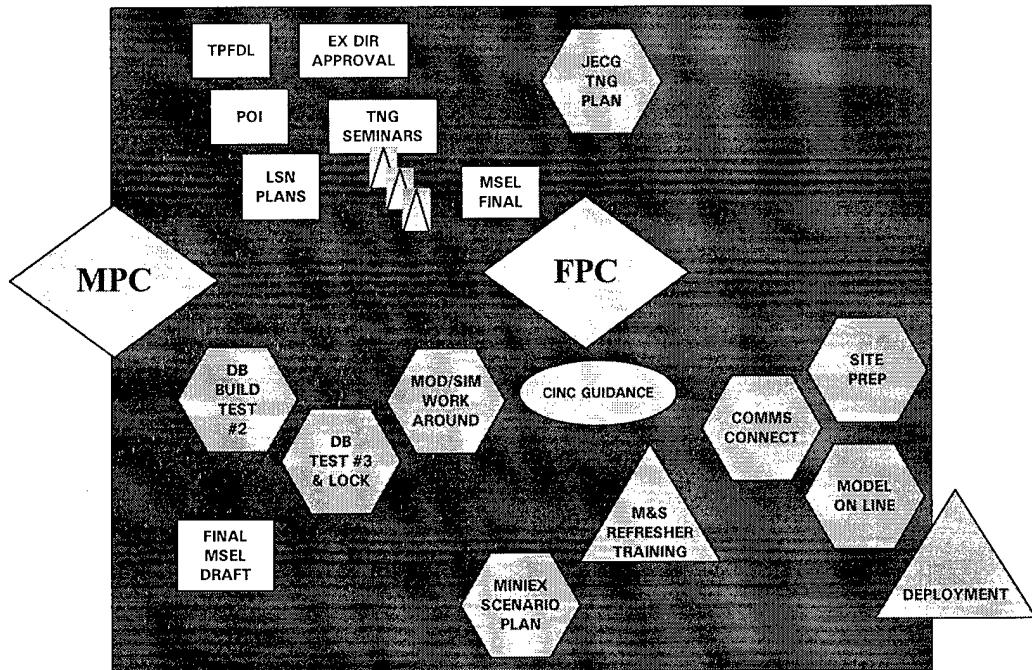


Figure 3.8 -- JELC Preparation Stage

The final planning conference (FPC) is conducted during the preparation stage. If the JELC has been fully implemented to this point, the FPC will be an event in which all details are checked and final adjustments made. After the FPC, a model timeline is established detailing deployment and redeployment schedules, augmentee training is conducted, and final site preparations are made.

After the introduction of JSIMS at IOC, its availability during preparation stage activities is expected to reduce the time, personnel, and other resources required in completing the database building effort and in conducting database tests #2 & #3. It is possible that capabilities resident in JSIMS may enable reduction in the number of database tests required. It is also anticipated that there will be a major reduction in the number of model/simulation workarounds required and fewer resources involved in development of those that may still be required. There will also be a significant reduction in the numbers of operators to be trained and the time required to train them. As in the planning stage, JSIMS availability will also enhance preparation stage efforts in non-simulation related activities that must be conducted in anticipation of the execution and post-execution stages of the exercise.

3.3.3.4. Exercise Execution Stage

The exercise execution stage commences with arrival of exercise support personnel at assigned sites, followed by final preparations for execution and training for response cell personnel, training audience, and JECG augmentees. A STARTEX conference or meeting is normally conducted after deployment for execution, but prior to the MINIEX. This is a final check of all planning details and preparations for the event. The MINIEX is conducted to ensure the M&S set-up is complete and operable in all aspects, and it affords response cells and JECG members an opportunity to practice respective execution functions. A COMMEX is normally conducted in conjunction with the MINIEX to confirm correct operation of exercise tactical communications circuits and JECG exercise control communications circuits. Specific communication and simulation "crash recovery" procedures are reviewed and tested during the MINIEX. These procedures are designed to minimize the impact of a failure of the simulation or exercise communications when the exercise is actually underway.

At STARTEX, the JECG becomes totally focused on scenario execution, control activities, and monitoring the accomplishment of exercise training objectives. Operational and technical control measures developed during design, planning, and preparation stages are employed as necessary to ensure achievement of exercise goals and training objectives. These activities are carefully managed to present the training audience with a training environment and scenario that are coherent between the levels of war, synchronized between events replicated in the simulation and those injected as pre-scripted MSEL events or those scripted during the course of the event, and realistic in the context of the exercise scenario. Every attempt is made to make the actual operation of the supporting simulation transparent to the training audience. During the execution stage there is frequently a mid-exercise AAR, but all exercises conclude with an AAR.

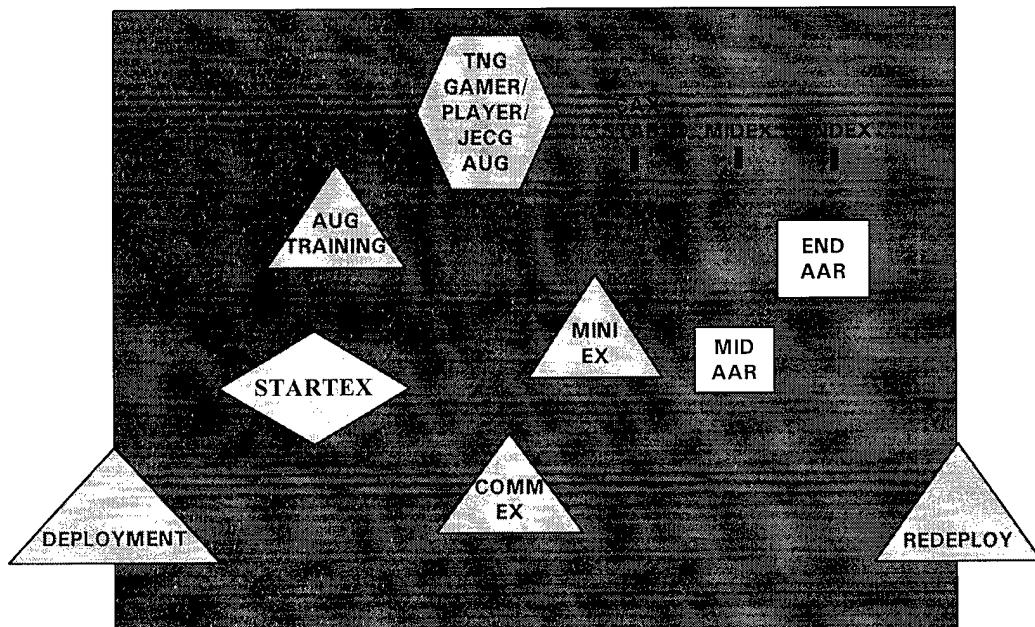


Figure 3.9 -- JELC Execution Stage

The capabilities resident in JSIMS at IOC are expected to reduce substantially the requirements for exercise control and support equipment and personnel during the execution stage. JSIMS is also expected to enhance the fidelity of the scenario presented to the training audience. It is anticipated that the fidelity and reliability of JSIMS at IOC will also reduce the probability of simulation failure and interruptions. This is an important factor in reducing the requirement for workarounds and employment of simulation “crash procedures,” which are historically manpower intensive operations. Additionally, the data monitoring and collection capabilities in JEMP that will be associated with JSIMS introduction are expected to reduce the number of exercise observers and analysts currently required to perform AAR operations and prepare AAR support graphics and other documentation. The Execution stage ends with the final AAR immediately after exercise ENDEX and initiation of redeployment activities.

3.3.3.5. Post-Exercise and Assessment Stage

The post-exercise stage includes completion of redeployment preparations and return to home stations. Immediately following return to home stations, external post-exercise and evaluation activities are performed to identify issues and lessons learned. After action review documentation is prepared for submission in accordance with current directives. If an event is supported by the JWFC, a JWFC Commander’s Summary Report (CSR) is prepared for his submission to the exercise sponsor. This report details the accomplishment of all exercise training objectives and is supported by an extensive summary of the data and observations collected from the exercise. If desired, the JWFC CSR can be used by the exercise customer for an internal training proficiency evaluation and as a reference document for use in preparation and submission of the Joint After Action Report (JAAR) and communications summary. Post-exercise activities continue until lessons and issues taken from the specific event are fed back into the JTS as contributions to continuous training process improvements.

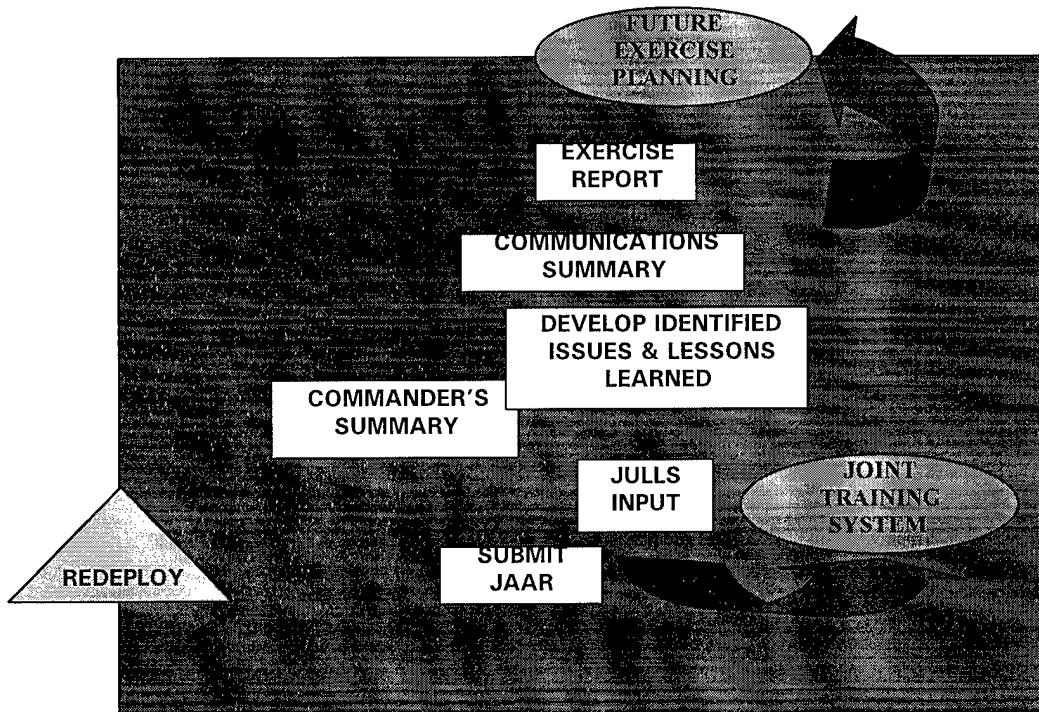


Figure 3.10 -- JELC Post Exercise and Assessment Stage

As in all other stages, it is anticipated that the introduction of JSIMS capabilities at IOC will facilitate the preparation of AAR and other post-exercise documentation. The end result will be increased efficiency in the feedback mechanism within the JTS and an overall improvement in the management of the JELC for follow-on exercise events.

3.3.3.6. JSIMS Joint Exercise Life Cycle (JELC) Support

The foregoing discussion reflects the JELC's character as an ordered sequence of processes, products, events, decision points, and activities that, if implemented in their entirety, guarantee a joint force commander achievement of his exercise goals and training objectives. As such, the JELC is dynamic in nature and changes periodically and as necessary to accommodate changes in training requirements, resources, and technology. It is expected that the JELC will change for JSIMS supported exercises on a course parallel to the introduction of increasing capabilities of JSIMS as sequential versions are fielded. While it is too early to project the full impact JSIMS will have on the JELC, it is anticipated that a significant restructuring and shortening of the overall life cycle will result, as well as a reduction in costs associated with its implementation.

As JSIMS objects are constructed and iterative builds of software are completed, verification and validation (V&V) of JSIMS domains and integrated end products (domains, core infrastructure, and conceptual model of the mission space – CMMS) will be conducted and accreditation processes will be implemented. From these activities, certified products will be stored in the JSIMS Mission Space Resource Repository (JMSRR). This will provide database developers a readily available resource from which to draw the objects and data needed to prepare JSIMS databases for specific training, mission rehearsal, education, or other use events. Additionally, the JMSRR

will contain information artifacts related to design, planning, execution, and post-exercise and assessment activities, including after action review, of JSIMS exercises. The JMSRR will be a timesaving resource for scenario developers who will be able to prepare scenario documentation based on readily available reference material in the JMSRR. It will become an efficient resource tool for exercise planners and exercise support personnel. These event preparation capabilities will mature as JSIMS matures. Depth and fidelity requirements generated by the training audiences and lessons learned during JSIMS application to exercises will be addressed, resulting in database and scenario development process enhancements with fielding of each sequential version of JSIMS.

3.3.4. Joint Exercise Scenario Support

The capabilities resident in JSIMS are expected to support training in a wide range of military contexts. To facilitate development toward this goal, three distinct training events have been chosen – (1) training of a joint force commander (JFC) and staff in a major theater war (MTW) scenario exercise event; (2) training a joint training audience in a military operation other than war (MOOTW) event; and (3) training a joint training audience in an academic seminar event (e.g., a prospective JTF headquarters staff response to an international disaster, such as an earthquake, hurricane/typhoon, etc.).

In addition to the comprehensive range of training to be facilitated, the user expects JSIMS to enhance implementation of the five stages of the JELC, resulting in less time required for exercise development, less manpower to support exercise design implementation, and achievement of a greater training threshold. Maximizing training effectiveness is the user objective for IOC.

The specific uses of JSIMS version 1.0 at IOC and how JSIMS might apply in those events are initially defined in terms of the existing Joint Training Confederation (JTC). The users require IOC JSIMS version 1.0 to provide, as a minimum, the equivalent functionality and training benefit available in the 1998 version of the JTC. While each of the JTC training functions will be present, it is understood that the level of complexity and degree of automation will continue to evolve as FOC approaches.

JSIMS at IOC (Version 1.0) is, therefore, expected to be used to support training through exercise support for any of the training audiences that follow:

- JTF and Service Component Commanders and staffs;
- Joint Force Land Component Commander (JFLCC) and staff;
- Joint Force Maritime Component Commander (JFMCC) and staff;
- Joint Force Air Component Commander (JFACC) and staff;
- Joint Special Operations Command Center;
- Army Corps/Division Commander and staff;
- Army Corps Commander and Staff;
- Army Division Commander and Staff;

- Air Force Component Commander and Staff;
- Joint Air Operations Center staff;
- Navy Numbered Fleet Commander and staff;
- Navy Battle Group Commander and staff;
- Marine Corps MEF Commander and staff; or
- Amphibious operations training

At IOC JSIMS can be composed to support any of the aforementioned simulation audiences by employing aggregate representations of ground forces, platform representations of air and sea assets, and replicating the interactions between them. It will simulate basic employment, sustainment, and intelligence operations, operate at variable clock speeds, and will require humans-in-the-loop (HITLs) participation of the simulation audiences listed. It will be designed to require a minimal number of role players and will not be required to support rapid modification of unit behavior.

3.3.5. JSIMS Operational Scenarios at IOC

At (IOC), JSIMS will focus on support for training at the strategic-theater and operational levels of war for unified combatant command staffs, joint task force (JTF) commander and staff, and JTF components in a training environment as shown in Figure 3.11. It will further be used to support Service training requirements for component commands within the context of a joint force at the operational level. It will also be used to provide situational awareness and operational engagement adjudication for application in the context of joint force academic seminar training events.

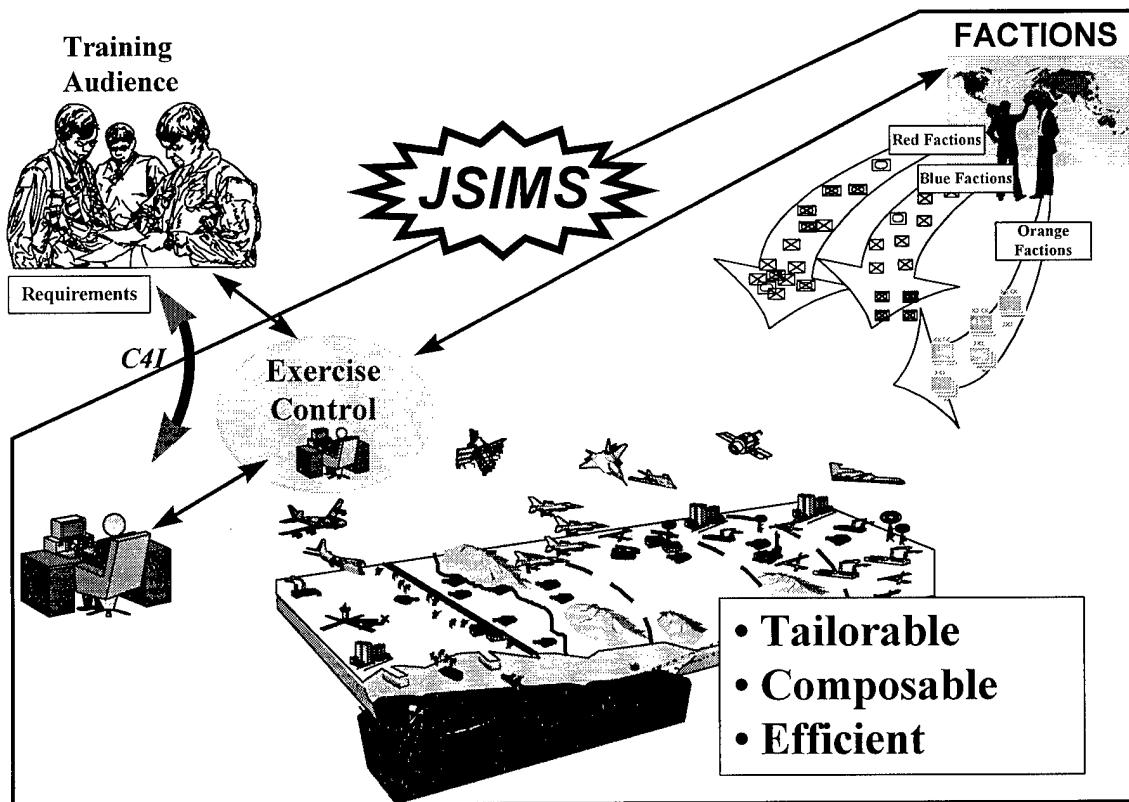


Figure 3.11 -- JSIMS Training Environment

3.3.6. JSIMS Employment at IOC

At IOC JSIMS will be used to support the training of joint task force and component commanders in a major theater war at the strategic theater and operational levels of war. JSIMS will be used to support training for specific training audiences to perform these tasks under the conditions and to the standards (measures and criteria) set by the combatant commander. These tasks will span the range of basic military operations, including land, sea, air, space, and special operations. Although JSIMS at IOC may not have all the functionality to support the full range of some associated warfare functions, these training events will still include such tasks, which may need to be supported outside the available simulation, as they frequently are in current exercise events. At IOC, the JSIMS JSB is expected to present to training audiences lower resolution representations of the terrain, ocean, atmosphere and space environment than will be available in subsequent versions of the simulation. Effects of the physical environment on military objects, tasks, actions and interactions will be represented to the extent possible at IOC. Impacts on (i.e., changes to) the physical environment caused by military object actions and interactions will also be represented to the extent possible. JSIMS at IOC will also simulate multiple sides and factions and realistically represent the activities of the forces of allies, neutrals, opposition (OPFOR) and "surrounding force" units within the context of a major theater war. JSIMS will need to present a seamless multi-dimensional battlespace representation to all members of the training audience, i.e., the visible representation of JSIMS simulated forces and their activities as

seen by the training audience on real world tactical presentations should make the operation of JSIMS transparent to the training audience.

3.3.7. Land Domain at IOC

In order to ensure training effectiveness in joint and Service training requirements at IOC for U.S. Army and Marine Corps forces, the JSIMS land domain will need to possess certain minimum functionality. The JSIMS land domain will need to simulate land force functional warfare mission essential task activities down to the battalion level that could reasonably be expected to occur in a major theater war. High interest company level tactical activities will also need to be represented. For example, JSIMS should simulate individual SOF team mission essential task activities. JSIMS will need the ability to simulate individual aircraft over land areas and to represent the functional activities of those aircraft both over land and in the maritime areas adjacent to the land operating area. JSIMS at IOC will also need to provide limited military operations other than war (MOOTW) capabilities.

3.3.8. Maritime Domain at IOC

To ensure effective training of U.S. Navy, Marine Corps, and Coast Guard forces, the JSIMS maritime domain will need to have certain minimum functionality. JSIMS will be employed to support training of joint force commanders and their staffs in the maritime arena and will be used to simulate multiple battle groups and their supporting forces across the full spectrum of naval warfare. JSIMS will need the ability to simulate individual ships, submarines, and aircraft in maritime areas and to represent the functional activities of those units both at sea and in the margins of sea-land interface. The conduct of naval warfare tasks – strike warfare (STW), surface warfare (SUW), air warfare (AW), undersea warfare (USW), amphibious warfare (AMW), command and control warfare (C2W), and mine warfare (MIW) -- will need to be supported by JSIMS. In replicating amphibious operations, JSIMS will need to support execution of a prepared, manually inserted landing plan, in which amphibious assault troops will disembark landing craft and/or helicopters, assemble, and proceed to their objective areas automatically. Amphibious assault vehicles will come ashore, assemble, and proceed to their objective areas automatically. As in the land domain, JSIMS will need to provide limited MOOTW capabilities in the maritime domain.

3.3.9. Air and Space Domain at IOC

To ensure training effectiveness of U.S. Air Force, Army, Navy, Marine, and Coast Guard training audiences in the joint arena at IOC, the JSIMS air and space domain will need to support the full spectrum of recognized aerospace roles, including aerospace control, force application, force enhancement, space support, and force support, as well as to simulate real world aerospace mission areas – counter-air and counter-space operations, strategic attack, interdiction, close air support, airlift, air refueling, space-lift, electronic combat, surveillance and reconnaissance, special operations, base operability and defense, logistics, combat support, on-orbit support, intelligence, and information warfare. Force enhancement functions that JSIMS will need to perform at IOC include theater missile defense/warning (TMD/W), navigation support, weather support, and

intelligence/ surveillance/reconnaissance (ISR). As in the ground and communications support, maritime domains, the air and space domain will also need to simulate necessary activities to support limited military operations other than war (MOOTW). JSIMS will need to simulate individual aircraft or flights across the full range of aerospace functional activities. It will also need to adjudicate and represent realistically aerospace tactical interactions through real world C4I systems and make the operation of the simulation transparent to the training audience.

3.3.10. Intelligence Support at IOC

At IOC, JSIMS will be employed to simulate real world joint intelligence capability, including intelligence operations planning and direction; intelligence collection resource and data management; intelligence information processing and distribution via real world C4I systems; and use of real world threat, imagery, and targeting databases. JSIMS will need to accommodate multiple levels of security; support combat assessment processes; fully integrate intelligence and operations representations into the simulation; improve fidelity of joint and Service training; display intelligence information; and incorporate realistic data for foreign representation and representation of US intelligence processes.

3.3.11. Logistics Support at IOC

At IOC, JSIMS will need to provide a representation of transportation and personnel movement from home stations throughout destinations in theater. It will need to support strategic planning, in-theater transportation, supply consumption, resupply, and material consumption, and redeployment planning. It will also need to portray activities involved in implementation of joint reception, staging, onward movement, and integration (JRSOI) of personnel and material. It is also envisioned that JSIMS will provide linkage or capabilities similar to those of the Analysis of Mobility Platform (AMP) to support deployment and re-deployment and to integrate Logistics Anchor Desk (LAD) activities.

3.4 Personnel and Operators

At IOC, the JSIMS user will include military and contractor personnel assigned and employed to support CINC and Service training. Training requirements for the JSIMS operator are discussed in the JSIMS Operational Requirements Document. Training will be conducted in accordance with the syllabus under development by the JSIMS Deployment and Training Integrated Product Team (DIPT) as described in the JSIMS Transition Plan.

Service unique training will be conducted by Service representatives of the JSIMS Enterprise Team.

3.5 Support Concept

The JSIMS JPO and the Integration and Development contractor will install the JSIMS hardware, test the system, and help conduct exercises to validate the model on site. They will also conduct hardware training for local site personnel. Subsequently, the I&D

contractor will provide follow-on support through a central technical control support facility.

Hardware support is the responsibility of the JSIMS user sites and Service programs.

4. **Phased Implementation of JSIMS.**

This portion of the JSIMS CONOPS discusses improvements to JSIMS after IOC leading up to the fielding of JSIMS version 2.0 at FOC in 2003. It introduces the projected new capabilities that accompany each version as it is added to the system in concert with the user requirements scheduled to be fulfilled with each iteration of the system. Because of the cyclic nature of software development and to complement the overall plan for introduction of JSIMS to support the JTS, a phased approach will be used to facilitate that introduction. Each version presented includes justification and description of the changes, as well as assumptions or constraints that apply to the particular version.

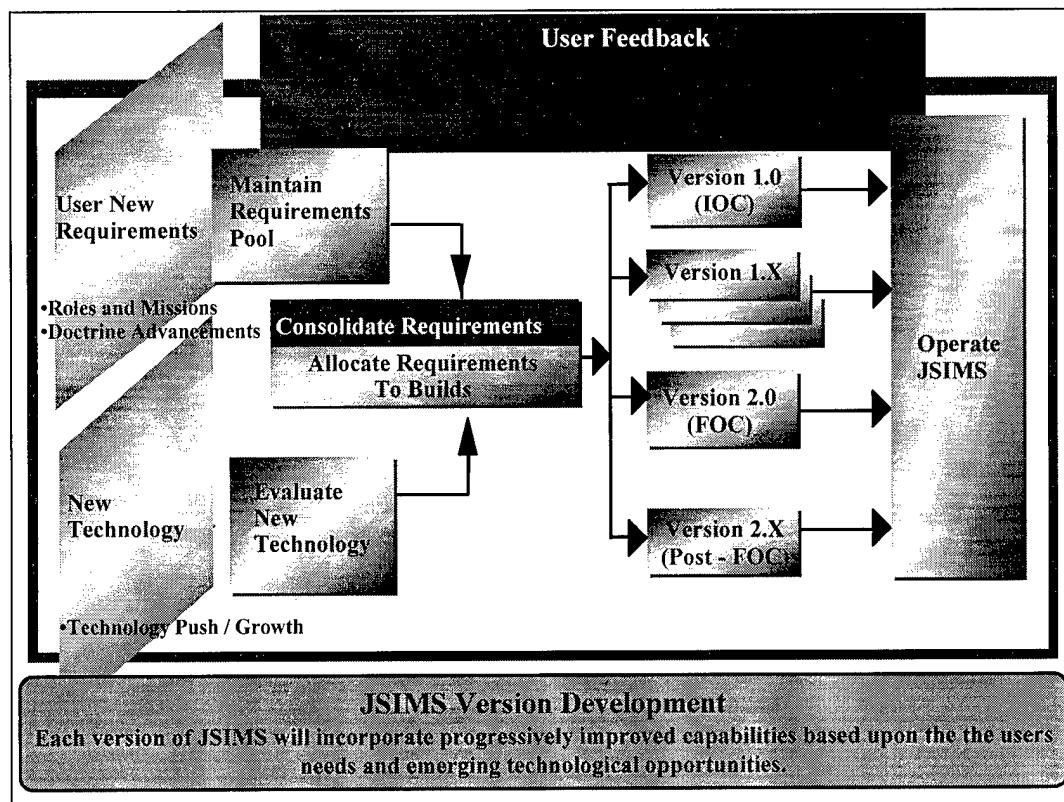


Figure 4.1 -- JSIMS Versions

4.1. **JSIMS Version 1.1**

In order to work toward the total training support planned for JSIMS, additional functionality will be added with each sequential version of the system. In addition to the uses introduced with the JSIMS IOC version 1.0, version 1.1 of JSIMS is envisioned to support training for additional training audiences as follows:

- CINC/JTF staffs with objects aggregated at staff level;
- Supporting CINC staff;

- A maritime Task Group Commander (using aggregate or platform representations of ground forces);
- A U.S. Marine Corps MEU(SOC) Commander and staff (using platform representations of ground forces).

The major enhancements that will come with JSIMS version 1.1 are that it can be composed to support the new simulation audiences listed above; it will support either aggregate or higher resolution representations of ground forces, as appropriate for the simulation audience and for the ground forces represented in the simulation; it will have increased support for interfaces to manned simulators to the level of fidelity of the mission space objects and to the scale of operations supported by the ground forces represented in the simulation; and it will have improved simulation of force application in military operations other than war (MOOTW).

4.2. JSIMS Version 1.2

Continuing to work toward meeting both joint and Service training requirements, JSIMS version 1.2 will be used to support the additional training audiences:

- A Joint Intelligence Center (JIC);
- A Joint Intelligence Center (JIC) and Joint Intelligence Support Element (JISE);
- An Army MI Brigade or smaller intelligence support staff;
- An Air Force Wing Commander and staff; or
- A Marine Component Commander and staff.

The major enhancements that are expected with JSIMS version 1.2 are that it can be composed to support the new simulation audiences listed above, using mixed aggregate and platform representations of ground forces, as appropriate for the simulation audience and for the ground forces represented in the simulation. This version will incorporate significant improvements in logistics, enhancing the capability to replicate activities in all four phases of conflict, deployment, employment, sustainment, and redeployment.

4.3. JSIMS Version 1.3

Adding further still toward the total training and other uses envisioned for JSIMS, version 1.3 will support additional uses while continuing to enhance the fidelity incorporated in earlier releases. Major enhancements introduced with this version will include its capability to support training of:

- Army Logistics staff;
- Navy Warfare Commander and staff
- Joint and Service planning and analysis;

- Mission rehearsal;
- Senior officer professional military education; or
- Joint and Service professional military education.

Version 1.3 will need to support rapid database construction with accurate data for mission rehearsal. Within the context of this description, JSIMS version 1.3 will be employed to support training, course of action analysis, operational planning, operational mission rehearsal, professional military education, and senior officer education.

4.4. JSIMS Introduction of Joint and Service Requirements

Initial requirements for JSIMS were developed by combining legacy models' training functionality and benefits with requirements to address the shortfalls of those systems to state what will be required in a new, state of the art simulation designed to provide essential training support for future users. These efforts, coupled with cooperative inputs from joint and Service representatives have resulted in the baseline requirements reflected in JSIMS requirement documents (MNS, FRD, ORD).

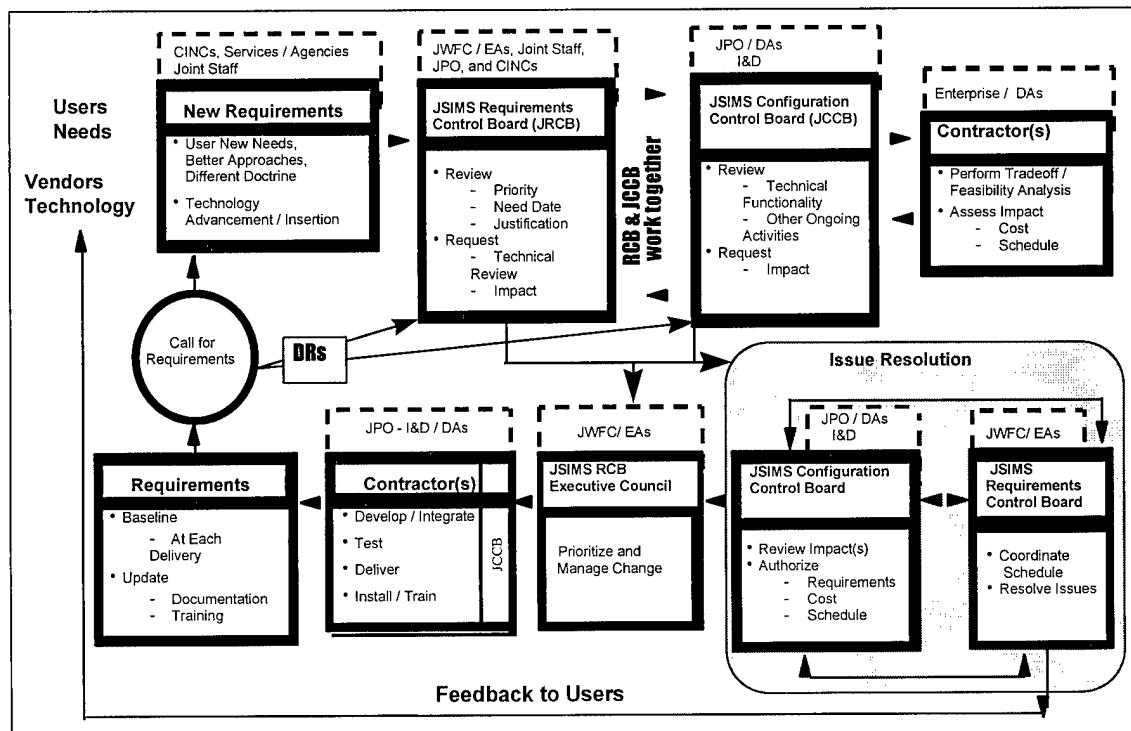


Figure 4.2 -- Meeting Evolving Requirements

Building on this baseline effort, introduction of joint and Service requirements into JSIMS will be managed by the JSIMS Requirements Control Board (JRCB) and the JSIMS Configuration Control Board (JCCB). Service and Joint Staff members representing the EAAs constitute the JRCB, which is chaired by the JWFC Concepts Division Chief. A JSIMS Configuration Control Board (JCCB) is established by the JPO

and consists of technical developers and the DAs and is chaired by the JSIMS Program Manager. The JRCB will work in close coordination with the JCCB using a periodic review cycle to support the legacy models to JSIMS transition.

The review cycle interval will be determined by changing requirements; however, at least one cycle will occur inside the decision cycle for each of the JSIMS versions. The FWG will meet on a regular basis and issue a call for new requirements from the CINCs and Services, make recommendation on JSIMS functional priorities, including new capabilities and simulations based on an assessment of training requirements, and monitor the activities and key decisions of the JSIMS development process to ensure they reflect CINC and Service user priorities. The requirements review cycle is diagrammed in Figure 4.2.

The JRCB will review all Requests for Change (RFCs) and Discrepancy Reports (DRs) that affect user requirements, and the JCCB will review all DRs. The boards may direct an Investigative Report (IR) to confirm the discrepancy. The JRCB will request a technical review and an impact statement from the JCCB, which will include cost as an independent variable for decision making. The JRCB will prioritize user needs and provide justification via updates to the ORD, CONOPS, and Transition Plan as appropriate. Requests for updates, changes, and deficiencies will be made and collected via electronic means from forms available on the JSIMS home page. Issue resolution between the JRCB and the JCCB is done at the functional working group (FWG) level. When the JRCB and JCCB issue cannot be resolved by the FWG, it will be forwarded to the Commander of the JWFC. He will chair a review panel consisting of the JPO director, four representatives from the DA community, the JWFC Concepts Division Chief, and four representatives from the EA community.

Over the course of sequential introduction of JSIMS capabilities, joint, Service and other user requirements will be enhanced with each new version from IOC version 1.0 to FOC version 2.0. In addition to joint force commander, functional/Service component commander and staff training, and Service specific training, JSIMS will provide support for planning and analysis, operational rehearsals, professional military education, senior officer education and training, and doctrine development and evaluation. The following paragraphs discuss and graphically portray presentation of the introduction of those capabilities to fulfill user requirements.

4.4.1 JSIMS Introduction of Joint Use Minimum Capabilities

The graphic at Figure 4.3 shows that JSIMS will need to provide at IOC, as a minimum, functional training capabilities for joint force commanders in chief, joint task force commanders, and functional component commanders, as they represent the highest priority training audiences. Training functionality for functional component commanders included are the joint force land, air, and maritime component commanders. Additionally, joint special operations task force commander and staff capabilities will need to be present in this version as a subset of joint special operations command center training functionality.

Supporting CINC and CINC or JTF context units will need to be added in version 1.1, as costs of producing those objects will likely preclude their preparation by the established

IOC date. JJC and JJC/JISE training capabilities can be deferred until version 1.2 to allow for moderation of the technical risks and development of special infrastructure software requirements to support those activities.

JSIMS version 1.2 is expected to support course of action analysis for a CINC, JTF, or component commander simulation audience in basic employment, the intelligence process, and sustainment, using aggregate representations of ground units, but the jump forward capability required to execute the simulation very fast and without humans-in-the-loop participation will probably not be available until FOC. Although not reflected in the graphic, education for joint simulation audiences will probably not be supported until version 1.3, when those staff functions are expected to be automated.

Desired Minimum Joint Functional Capabilities					
	v 1.0	v 1.1	v 1.2	v 1.3	v 2.0
J1_CINC / JTE Training	-----	-----	-----	-----	-----
J2_Supporting CINC Training	-----	-----	-----	-----	-----
J3_CINC / JTE & Components Training	-----	-----	-----	-----	-----
J4_JELCC (Land Component) Training	-----	-----	-----	-----	-----
J5_JFACC (Air Component) Training	-----	-----	-----	-----	-----
J6_JFMCC (Maritime Component) Training	-----	-----	-----	-----	-----
J7_JJC Training	-----	-----	-----	-----	-----
J8_JJC & JISE Training	-----	-----	-----	-----	-----
J9_JSOCC (Special Operations) Training	-----	-----	-----	-----	-----

Figure 4.3 -- Sequential Introduction of JOINT Use Capabilities

4.4.2. JSIMS Introduction of ARMY Use Minimum Capabilities

The following graphic (Figure 4.4) reflects the introduction of minimum Army Service training functional capabilities. Minimum IOC capabilities include functional training for corps commanders and staffs, or corps commanders and division commanders and their staffs. Army intelligence staff training capabilities are expected to appear in JSIMS version 1.2, with Army logistics staff training capabilities arriving in version 1.3. Brigade/battalion commander and staff training capability will not be available in the land simulation processes at JSIMS IOC. Rather, the goal for initial fielding of this capability is version 2.0 at FOC.

Desired Minimum Army Functional Capabilities					
	v 1.0	v 1.1	v 1.2	v 1.3	v 2.0
A1_Corps Commander and Staff Training	-----	-----	-----	-----	-----
A2_Corps/Division Commander and Staff Training	-----	-----	-----	-----	-----
A3_Division Commander and Staff Training	-----	-----	-----	-----	-----
A4_Battalion or Brigade Training	-----	-----	-----	-----	-----
A5_Army Logistics Staff Training	-----	-----	-----	-----	-----
A6_Army Intelligence Staff Training	-----	-----	-----	-----	-----

Figure 4.4 -- Sequential Introduction of ARMY Use Capabilities

While these are the minimum capabilities JSIMS is expected to deliver, Army Service specific capabilities will be introduced as early as they can be supported by the JSIMS infrastructure. While some of the software required to support Army Service specific

functional capabilities will also be used to support other Service or joint capabilities, much of it will be unique to Army requirements and can be implemented with minimal impact on other uses. Education for Army simulation audiences is not expected to be supported until FOC, when the required staff functions will be automated.

4.4.3. JSIMS Introduction of AIR FORCE Use Minimum Capabilities

The graphic below (Figure 4.5) reflects the introduction of minimum Air Force component commander and staff training functional capabilities. Training functionality for Air Force component commanders and staffs needs to be resident in JSIMS version 1.0 at IOC, at the same time JFACC and JAOC training support capabilities are expected to be introduced. Linkages to Air Force designed simulators will support this effort. Low resolution capabilities introduced at IOC are expected to be enhanced in later versions of JSIMS, as technology and program funding can produce higher levels of resolution. Training functionality for wing commanders and staffs needs to be brought on line with the fielding of JSIMS version 1.2.

Desired Minimum Air Force Functional Capabilities					
	v 1.0	v 1.1	v 1.2	v 1.3	v 2.0
E1_AFFOR_Training	-----	=====	-----	-----	-----
E2_JFACC_and_JAOC_Training	-----	=====	-----	-----	-----
E3_Wing_Commander_and_Senior_Staff_Training	-----	-----	=====	-----	-----

Figure 4.5 -- Sequential Introduction of AIR FORCE Use Capabilities

While some of the software required to support Air Force Service functional capabilities will also be used to support other Service or joint capabilities, some is unique to the Air Force and can be implemented as the JSIMS program can deliver it in coordination with other users. Education for Air Force simulation audiences is expected to be supported as automation of staff functions can be incorporated.

4.4.4. JSIMS Introduction of NAVY Use Minimum Capabilities

The following graphic (Figure 4.6) reflects the introduction of minimum Navy Service training functional capabilities. While some of the software required to support Navy Service functional capabilities is also used to support other Service or joint capabilities, most of it is unique to Navy requirements and will be introduced in coordination with other users. Training functionality for Navy numbered fleet commanders and battle group commanders needs to be resident in JSIMS version 1.0 to align with the other component commanders resident in this version. Navy task group commander and staff training is expected to be introduced with version 1.1, and the completion of Navy use capabilities needs to be present with the introduction of version 2.0, which incorporates linkages to the battle force tactical trainer (BFTT).

Desired Minimum Navy Functional Capabilities					
	v 1.0	v 1.1	v 1.2	v 1.3	v 2.0
N1 Numbered Fleet Commander Training	-	-	---	-	-
N2 Carrier Battle Group Commander Training	-	-	---	-	-
N3 Navy Task Group Commander Training	-	-	---	-	-
N4 Navy Warfare Commander	-	-	---	-	-
N5 Navy Ship Training	-	-	---	---	-

Figure 4.6 -- Sequential Introduction of NAVY Use Capabilities

4.4.5. JSIMS Introduction of MARINE CORPS Use Minimum Capabilities

Figure 4.7 reflects the introduction of minimum Marine Corps Service training functional capabilities. Minimum marine expeditionary force (MEF) and amphibious operations training support needs to be resident in JSIMS version 1.0 to align with other potential JTF and component commander capabilities. Full capability for MEF landing training will be introduced later as mixed detail in the infrastructure and mission space objects; certain Navy context and higher headquarters units; and modeling of amphibious operations, including the transfer of command from the JFMCC to the JFACC and/or JFLCC become available. Marine expeditionary unit (special operations capable) (MEU SOC) minimum training capability needs to be resident by JSIMS version 1.1. MARFOR training and planning capabilities need to be introduced with JSIMS version 1.2. Education for Marine Corps simulation audiences is expected to be supported as automation of staff functions can be incorporated.

Desired Minimum Marine Corps Functional Capabilities					
	v 1.0	v 1.1	v 1.2	v 1.3	v 2.0
M1 MEF Training	-	-	-	-	-
M2 MARFOR Training /Planning	-	---	-	-	-
M3 MEU(SOC) Training	-	-	---	-	-
M4 Amphibious Operations Training	---	-	-	-	-

Figure 4.7 -- Sequential Introduction of MARINE CORPS Use Capabilities

4.4.6. JSIMS Introduction of Other Use Minimum Capabilities

The following graphic (Figure 4.8) reflects expected introduction of other specific training minimum functional capabilities and shows when non-training uses are expected to be supported for other simulation audiences.

Desired Minimum Other Functional Capabilities					
	v 1.0	v 1.1	v 1.2	v 1.3	v 2.0
O1 Planning and Analysis	-----	-----	-----	-----	-----
O2 Crew/Team Mission Rehearsal	-----	-----	-----	-----	-----
O3 Senior Officer Education	-----	-----	-----	-----	-----
O4 Professional Military Education	-----	-----	-----	-----	-----
O5 Doctrine Development	-----	-----	-----	-----	-----

Figure 4.8 -- Sequential Introduction of Other Use Capabilities

5. Concept for JSIMS at FOC and Beyond

5.1. Mature JSIMS Capabilities

By FOC, JSIMS will mature to possess all the capabilities necessary to support joint training from the strategic national level down through tactical level engagements of individual units, including Service specific training requirements, operational rehearsals, doctrine and tactical development efforts, military education, and a yet to be determined level of operations analysis. When JSIMS version 2.0 is introduced at FOC in 2003, it will be employed to provide full spectrum training through the entire warfare hierarchy for national headquarters staffs, CINCs, JTF commanders, joint force functional/Service component commanders, and Service warfare commanders and their staffs. It will also be employed for operational planning and analysis, including course of action analyses at simulation rates greater than 10:1; mission rehearsal down to tactical (crew/team) level, with interfaces to manned simulators; joint and Service professional military education, joint and Service senior officer education; and doctrine development and evaluation with behavior editing for training audiences. It will provide these capabilities using mixed representations of ground forces in basic employment, sustainment, intelligence (including automated fusion), force application and other (non-force) military operations other than war (MOOTW); mobilization operations, deployment, redeployment, space activities, special operations; nuclear, biological, and chemical (NBC) operations; information operations; and amphibious warfare. JSIMS version 2.0 will also be employed in "jump forward" operations, i.e., execution at rates substantially greater than real time and without human-in-the-loop participation of the simulation audience. It will also be used in activities that require rapid modification of unit behaviors. Additionally, JSIMS version 2.0 will be employed to support education of all joint and Service simulation audiences.

5.1.1. JSIMS Training Scenario Support at FOC

At full operational capability (FOC), JSIMS is expected to present a complete, accredited, interactive joint synthetic battlespace (JSB), spanning strategic national level (e.g., activities involving interactions between Washington headquarters level staffs and agencies with one or multiple commanders in chief (CINCs) and staff(s) and/or theaters to tactical levels (e.g., the prosecution of individual battles or engagements). JSIMS at FOC will be used to represent all warfare domains and in training and preparation for all phases of operations (mobilization, deployment, employment, sustainment, and redeployment). The JSIMS JSB will also be used to support training and preparation for all forms of military operations other than war (MOOTW), including peacekeeping or peace enforcement operations, arms control, psychological operations, migrant-refugee operations, counter-terrorism, DOD support to counter-drug operations, nation assistance, noncombatant evacuation operations, humanitarian assistance, disaster relief, and others as identified in the National Military Strategy and Joint Publication 3-07. JSIMS should incorporate those capabilities resident in the Joint Conflict and Tactical Simulation (JCATS) and in the Joint Theater Level Simulation (JTLS).

5.1.2. Joint Simulations Replaced by JSIMS by FOC

In addition to incorporating the training functionality and benefit of the Joint Training Confederation by FOC, JSIMS will replace joint simulations that follow:

- Joint Theater Level Simulation (JTLS). JTLS is a multi-sided, interactive, computer-driven simulation that was designed as a theater-level model for use by commanders and planners in the analysis, development, and evaluation of operations plans.
- Joint Conflict and Tactical Simulation (JCATS). JCATS is a multi-sided, interactive, entity level joint conflict simulation that was developed to incorporate the functionality of the Joint Conflict Model (JCM) and the Joint Training Simulation (JTS).

5.1.3. JSIMS Support of Other Functions at FOC

At FOC, JSIMS will be used to support professional military and senior officer education, mission planning, mission rehearsal, and doctrinal development and evaluation. At maturity, JSIMS will allow globally dispersed entities, including deployed U.S. forces, R&D test facilities and ranges, defense educational institutions, reserve components, U.S. Government agencies, allies, and multinational forces to participate simultaneously and seamlessly in multi-echelon, simulation-assisted training events. In this regard, it is expected that JSIMS at FOC will:

- Have the flexibility to accommodate, simultaneously and selectively, different functional applications and levels of detail, including all potential opposing forces (OPFOR), allies, and neutrals, within an application (e.g., tactical, operational, and strategic levels of warfare for training and exercises).
- Incorporate simulation of social, economic, and political factors that affect missions across the full range of military operations. These factors may include training with host nation and other coalition forces, U.S. Government agencies, non-government agencies and organizations, private volunteer organizations, and international organizations.
- Incorporate human and organizational behavioral complexity.
- Display tailored simulation results through users' C4I systems or similarly realistic representations for training and exercises. These displays will employ operational symbology, notations, and terminology.
- Link live, constructive, and virtual forces to form an environment that stimulates training audience or other users' C4I systems.
- Be able to incorporate distributed and remote computer processing for a user characterized by interoperable elements located at many geographical sites, with the capability to operate a subset of JSIMS in a stand-alone (scaleable, part task) mode.

- Enable accelerated development of data/knowledge bases and the creation of semi-autonomous forces that are capable of representing higher and lower echelons of command, and U.S., allied, coalition, neutral and opposing forces, to reduce exercise overhead and allow for crisis rehearsals.
- Have the ability to operate in a distributed mode to various dispersed training audiences, with or without external support, coupled with the ability to conduct smaller events in a stand-alone mode using organic resources. Distribution of the system's multiple capabilities will be tailored to each level, present the degree of resolution/aggregation and fidelity required at each level, and be active or available from exercise design through planning, preparation, execution, and post-event assessment and feedback.
- Have the capability to link to the JEMP AAR module for operational after action review (AAR) functions, as well as a built-in ability to develop technical AAR material that will support rapid turnaround of exercise results.
- Incorporate requirements that result from implementing Joint Vision 2010.

6. JSIMS Scenarios

Modeling and Simulation Scenarios have historically provided training context -- the conditions, assumptions, political, strategic, military, and operational factors that combine to form the dynamic setting in which military users train during an exercise.

6.1. Exercise Design Role

Scenarios are developed as part of the Joint Exercise Life Cycle. Exercise planners, control group members, technical control and database development personnel, response cell members, and opposition forces assist in scenario development and employ it as the central context and script for logical preparation and management of the exercise on behalf of the training audience.

6.1.1. Joint Exercise Control Group

The function of the Joint Exercise Control Group (JECG) is to ensure the training audience is given a coherent, seamless presentation of the scenario activities, including managing the simulation events, scripted events, opposition forces, role players, and controller intervention. The JECG monitors the flow of exercise execution and fulfillment of training objectives.

Exercise control responsibilities:

- Guide and focus the training audience using scenario adaptations via simulation events, role player inputs, or scripted events. Course corrections by the JECG are crafted to be transparent to the training audience. Whenever possible, they will be seamlessly injected using JSIMS to real world C4I systems connectivity.
- Anticipate the outcome of training audience activities and decisions.
- Ensure the simulation and linked activities remain technically coherent and operationally synchronized.
- Track the activation of critical scenario events and accomplishment of training objectives for after action review and documentation of lessons learned.

During a distributed exercise event, the JECG controls the exercise through site controllers deployed to the distributed sites, such as those listed in figures 6.1 and 6.2. The JECG representatives supervise the distributed site response cells responsible for operating the scenario assigned forces in the JSIMS model.

6.1.2. Joint Exercise Player - Response Cells

Players. The military forces that will perform the training tasks vary with each exercise and scenario. A notional CINC/JTF operational level training audience and response cell structure for a major theater war scenario is shown at Figure 6.1.

CINC and JTF Training Audience			
JTF Component	Provider	Example Response Cell Location	Approximate Response Cell Size
Joint Task Force (JTF)	CINC and Staff	A centralized Location such as Camp Blanding FL, possibly a wargaming facility, or major headquarters such as USACOM's JTASC	JECG - 51 (Includes: AAR- 16; Tech Contr-15; Others-20)
Navy Forces (NAVFOR) Commander, Numbered Fleet and Staff	Commander, Cruiser Destroyer Group (COMCRUDESGRU) or Commander, Carrier Group (COMCARGRU) and staff	A major headquarters, such as Naples, or an exercise support location such as the Warrior Preparation Center	30 personnel (Includes 2 Tech Contrs.)
Air Forces (AFFOR) (May include the Joint Force Air Component Commander (JFACC))	Commanding General, Numbered Air Force and Staff	CONUS Air Force Base, or overseas Air Base location	30 - 40 (Includes 2 Tech Contrs.)
Marine Forces (MARFOR)	Commanding General, Marine Expeditionary Force (MEF) and Staff	Okinawa, Japan and Det Rear, or Camp LeJeune, North Carolina	50 - 100 (Includes 2 Tech Contrs.)
Army Forces (ARFOR)	Commanding General, Corps and Staff	A major headquarters such at Stuttgart Germany, or an Army exercise location such as Grafenwohr	75 - 150 (Includes 2 Tech Contrs.)

Figure 6.1 -- CINC and JTF Training Audience and Response Cells

A typical training audience consists of the JTF commander and his staff and component commanders with their staffs. Under the JSIMS architecture, component commanders

and their staffs are expected to participate as distributed participants operating from home stations. The players use their normal operating procedures, C4I, and applicable real world or exercise developed OPLANs.

Response Cells. Response cell personnel provide the interface between the simulation and the training audience for the flow of JSIMS gaming data and automated reporting outputs, role player inputs, and scripted events. To the extent possible, this information is presented to the training audience through normal component and service information and decision making channels via real world C4I connectivity. Response cell members are normally drawn from component commands participating in the exercise. They simulate the activities of echelons below the lowest level of component play and role play units represented. The training audience is expected to be located at distributed sites and use real world C4I systems to interface with JSIMS.

6.1.3. Supporting CINC Roles

Exercise design will also include replication of the critical contributions of the supporting CINCs to the JTF. In this case, the representatives are not necessarily part of the training audience, but may consist of role players assisted by JSIMS automated functionality.

JSIMS is expected to address the functions of the supporting CINCs as indicated in Figure 6.2. Real world C4I systems connectivity will include supporting CINCs operating from distributed locations.

JSIMS Supporting CINC Functionality				
Supporting CINC	Mission Contribution	Response Cell Location	Cell Size	Simulation Representation
TRANSCOM	Transportation: Airlift, Sealift to the theater	Scott Air Force Base, Illinois; LNO on JTF Staff	2	Role Player w/ automation: JSIMS lift asset data base, JOPES tools, and C4I connectivity
SPACECOM	Theater ballistic missile warning and tracking	Peterson Air Force Base, Colorado Springs, Colorado, LNO on JTF Staff	2	Role Player w/ automation: JSIMS Space asset data base, compatible tools, and C4I connectivity

Supporting CINC	Mission Contribution	Response Cell Location	Cell Size	Simulation Representation
STRATCOM	Nuclear, Biological, and Chemical (NBC) support	Offutt Air Force Base, Omaha, Nebraska, LNO on JTF Staff	2	Role Player w/ automation: JSIMS NBC data bases, compatible tools, and C4I connectivity

Figure 6.2 -- JSIMS Supporting CINC Functionality

6.1.4. JSIMS Technical Control and System Support

Simulation control is managed by the Simulation Technical Control Center (Tech Control). The Senior Simulation Controller ensures JSIMS remains synchronized with exercise requirements. Where feasible, Primary Tech Control is usually collocated with the JECG at the host simulation site to enhance coordination. Tech Control cells will be located at each distributed site. These cells will provide the JSIMS functional and technical interface between the workstation operators and controllers, exercise control staff, and the technical support staff.

6.1.5. JSIMS Opposing Forces Support

During exercise planning, the assigned OPFOR team will develop scenario specific events, role player scripting, data collection requirements, force structure, and tailored databases to be integrated into the exercise. It is envisioned that JSIMS will enable the OPFOR, as coordinated with the JECG, to provide thinking, fighting, interactive opposition or stress elements that realistically emulate threats in terms of doctrine, tactics, techniques, and procedures that will sustain realism and challenge the training audience. The objective of the OPFOR team is to provide sustained realistic training support. This objective is carried through active participation in exercise planning and design, through execution of the scenario based OPFOR Campaign Plan during the exercise event. The OPFOR requires a higher level of automation to control simulation units than is required by the player forces. For a major theater war scenario, the OPFOR is expected to consist of approximately 50 simulation operators and controllers and will normally be collocated with the main body of the JECG.

6.2. Conceptual Development Scenarios

JSIMS will replicate joint and service interactions in an operational setting that embraces a "real world" combat or nontraditional mission environment. This will be accomplished through the development of the JSIMS conceptual model of the mission space (JCMMS). This conceptual model will evolve from an operational scenario setting designed to represent selected entities, actions, and interactions as they exist in a potential operational warfighting or nontraditional operational situation.

The application of development scenarios is intended to provide the JSIMS development community with a sample context within which user requirements can be met -- broad background and events that drive user training interactions, functions, and processes, regardless of geographic location or level of warfare. Specific locations and levels are used to accommodate finite regional and functional CINC training requirements, traceability, and environmental fidelity. In these scenarios JSIMS will need to support simulation of the transportation, reception, staging, onward movement, and integration of ground forces in a joint synthetic battlespace that realistically represents the environment that would exist on real world operational displays and C4I systems.

6.2.1. Operational Representations

The scenario setting will establish the conditions that are expected to exist in a dynamic environment. Within this mission setting, activities will be selected to address user training objectives. The scenario provides the operational context upon which the eventual exercise planners and military users tailor, compose, and efficiently build a wide range of complex training exercises.

6.2.1.1. Linkage to UJTL, JMETL, JUCL and SSS

Scenario representation for development purposes is a method to tie objects and their functionality to the design objectives of the simulation. Those objectives, in the case of JSIMS, are training objectives and they are clearly defined in the Universal Joint Task List (UJTL) and the CINCs' Joint Mission Essential Task Lists (JMETLs). For JSIMS development, mission essential tasks are prioritized in the JSIMS Universal Capabilities List (JUCL) and further broken down into the System/Subsystem Specification (SSS) in terms that are meaningful to developers.

To assist development of the desired functionality simultaneously with the preparation of the SSS object specifications, what is needed is an understandable depiction of useful interactions that could be traced to the original requirements. Developers need the SSS to describe the attributes and interactions of the objects, and they need a scenario to understand how the interactions relate in a real world situation. Although it will be transparent to code developers, the scenario should be traceable to actual training objectives as described in selected JMETLs derived from the UJTL.

6.2.2. Role in Verification, Validation and Accreditation

Development scenarios can be divided into small functional units or "Use Cases." Each use case is traceable to the UJTL item(s) it supports. Functional traces from the scenario use case to the training objective(s) defined by the UJTL (threads) can be cataloged for future use in Verification, Validation, and Accreditation (VV&A). Developers will seek to ensure functionality defined by the elements in the SSS applied through the use cases is accurately implemented. During validation this implementation will be certified to have met the training objectives derived from the UJTL.

6.2.2.1. Validation Utility -- Improved Exercise Design

Scenario based development offers the added utility of ensuring a final JSIMS scenario design that can be validated to meet requirements based training objectives by assembling previously tested use cases into operational scenarios to be used during actual exercises. Training objectives will already be validated during development, and threads will be identified for the use cases.

6.2.3. Scenario Tools -- Vignette Building Blocks

Scenario development efforts for an exercise can concentrate on composing a scenario to meet specific user requirements, rather than trying to ensure training objectives are contained within the execution of a new scenario design. While the use cases devised during JSIMS development may not account for every training objective that can be derived from the UJTL, they will provide a robust set of scenario elements for future use. As new training requirements emerge, exercise scenario developers will need to design additional use cases to complete operational scenarios using methods similar to those described above.

These CONOPS scenarios are intended to support both the users and the development community and to provide a starting point for the creation of a repository of event vignettes. The events will be matrixed to user training requirements as expressed in the Universal Joint Task List. At the lowest level, JSIMS vignettes are expected to form stand alone, high fidelity training segments spanning the warfare domains and military functions. When combined and aggregated, they can become traceable building blocks designed to support tailorable, composable, and efficient automated exercise design, planning, and preparation.

6.3. Development Scenarios - Initial Focus

The initial JSIMS development scenarios include: (1) training a joint force commander and staff in a major theater war as addressed in the national military strategy, e.g., a scenario developed to replicate a joint training environment supporting a major theater war (MTW) in Southwest Asia (SWA); (2) a joint military operation other than war (MOOTW) training event; and (3) a joint academic training seminar.

The initial scenarios and development effort are intended to facilitate creating a repository of information and building blocks suitable for expansion into other scenarios and mission locations. Additional scenarios and locations will be developed as needed.

6.3.1. Southwest Asia Major Theater War

The SWA-MTW context is consistent with the Defense Planning Guidance Illustrative Scenarios for Planning and with guidance to consider the ongoing work in the Joint Warfare System (JWARS) force analysis simulation model.

6.3.1.1. Focus and Sufficiency

The specific area and context for the initial JSIMS Development Scenario -- the Southwest Asia major theater war (MTW) and training objectives across strategic theater and operational levels of war -- were selected both to focus the initial development and for breadth and sufficiency of the notional training environment.

Also in regard to sufficiency, the development scenario context stresses the five phases of military operations. It offers opportunities to create smaller subsets to facilitate developer (as well as exercise planner) build efforts and subsequent integration into the JSIMS model. The setting replicates a challenging training environment.

6.3.1.2. A CINC/JTF Mission

The initial development scenario is intended to be representative of the level of scenario for use as a basis for creating a training environment designed to train a joint force commander, his staff, and the component commanders and their staffs in the processes and functions involved in the planning and prosecution of a major theater war (MTW).

This context would generate activity and communications with most of the US joint combatant commands, their service components, CONUS based training and force providers, and joint supporting commands. These organizations have expressed their JSIMS user requirements in the JUCL and the ORD. This scenario places the user organization requirements into a relational setting.

The MTW mission setting is predicated on an international mandate, and involves multiple sides and factions - replicated as coalition forces, assets, and basing support from around the world, and has an opponent with internal political factions, realistic military capabilities, and regional threat potential. These aspects of the context are intended to support development of robust training simulation capabilities.

6.3.1.3. Build Toward the IOC Event

The initial development scenario is intended provide developers and users the context of a notional MTW setting sufficient to build toward the eventual IOC event - a JTF training exercise supported by JSIMS. The IOC exercise is expected to be designed to facilitate training audience achievement of maximum training value in an environment in which resolution of ground forces may be aggregated at the battalion level or higher. High interest company level and special operations force activities will need to be replicated, as well. Air, space, and maritime forces are expected to be represented as individual platforms.

6.3.2. Follow-on MOOTW Development Scenario

The JSIMS MOOTW capabilities development effort is viewed as a progression of refinements through JSIMS FOC.

The MOOTW scenario can be used for training the same joint force commander and staff that constitutes the training audience for the MTW described above, or it can be adapted to support training of a separate joint force commander and staff, as well as

service specific training. Decisions on training audience, exercise goals, and training objectives should drive further scenario development and exercise design. Higher levels of behavior complexity and resolution will be required to portray MOOTW.

6.3.2.1. Forces and Level of Refinement.

Many of the forces in the JSIMS MOOTW development scenario will be created and initially simulated to the aggregate level of resolution achieved during the JSIMS conceptual development effort on the MTW scenario described above. For MOOTW, these initial model efforts also need to include Special Operations Forces and other specialized units and organizations within Services.

6.3.2.2. Unique Capabilities

To reflect user requirements and unique considerations and complexities encountered in the conduct of MOOTW missions, the initial JSIMS development efforts for the support of MOOTW exercises should continue to be refined and additional capabilities addressed. JSIMS MOOTW simulation will need to replicate non-lethal weapon applications and effects, as well as other military force activities not involving hostile actions. Higher levels of complexity and resolution will be necessary to portray MOOTW activities. Typical of these are non-combatant evacuation operations (NEO), refugee interdiction and humanitarian assistance operations, psychological operations (PSYOPS), and civil affairs operations.

6.3.2.3. Environmental Conditions

Environmental conditions will also need to be considered in the development of JSIMS MOOTW training support capabilities. Urban features such as road and power grids, blueprints for key terrorist targets such as embassies, telecommunications sites, airports, and sewers or underground tunnel access points are samples of non-traditional operational environment considerations that impact MOOTW operations. This modeling effort, perhaps down to individual entity level actors, will be essential to staging accurate rehearsal and training events for high profile and sensitive missions such as hostage rescue and non-combatant evacuation operations.

6.3.2.4. MOOTW in JSIMS Events - Progressive Automation

Because of the unique nature and smaller force entities normally involved in MOOTW operations, a moderate level of HITL intervention is expected to be required in IOC MOOTW exercise events. As greater resolution is effected with follow-on versions, HITL intervention is expected to diminish substantially.

6.3.3. Academic Seminar Scenario

The application of JSIMS during an academic seminar will focus on a training audience such as a class at the National Defense University, Armed Forces Staff College or the Service War Colleges. The JSIMS user will consist of the academic staff and planners, and their student bodies.

6.3.3.1. Environmental Conditions

The initial academic seminar scenario might be described in the context of a fast breaking international disaster response. Examples of candidate scenarios include an earthquake, hurricane/typhoon, or breach of a nuclear power plant. Other candidate scenarios could be based on international crises in which national headquarters level military and other agency staffs would be involved in development of responses to politico-military developments associated with the crises. Such scenarios might run at accelerated game speeds to facilitate academic training while maintaining realistic operational conditions. Such training environments will require a high degree of automation and behavioral modeling to avoid significant levels of role player activities.

6.3.3.2. Forces and Level of Refinement

Some assets and capabilities developed for the MTW and/or MOOTW scenarios above could be used to react to a disaster requirement. Additional capabilities would include field hospitals, water purification systems and specialists, engineering units, security forces, civil-military operations specialists to deal specifically with a massive refugee problem, media and public affairs specialists.

6.3.3.3. Unique Capabilities

Academic training events would require a higher level of automation to replicate a broader range of military force levels and activities, as well as other U.S. Government, foreign government, nongovernmental organizations, and private voluntary organizations than might be required or emphasized in scenarios developed for operational training audiences.

The ability of JSIMS to return to a specific point in simulation time in the joint synthetic battlespace (JSB) is expected to facilitate comparative analysis of alternative courses of action, which will make it extremely useful in supporting academic seminar types of training events.

6.3.4. Academic Seminar Events.

Academic seminar training sessions using JSIMS tools could be developed as precursors to operational exercises and as stand alone events. Examples include crafting operations plans, crisis action planning, standing up a joint task force, TPFDD development, or other JOPES processes. The scenario for precursor academic seminar training could be the same as that developed above for the operational training exercise such as the joint force commander in an MTW or the MOOTW training audience, or it could be an entirely different scenario. In any case, the academic seminar should be designed with a clear understanding of training objectives to be achieved in the course of the event.

6.4. JSIMS Scenarios at FOC

As sequential versions of JSIMS are fielded after IOC, scenarios similar to those developed for JSIMS applications at IOC can and should be developed. These events will achieve increasingly refined levels of resolution and be able to accommodate more diverse training objectives at a finer level of detail based on greater JSIMS capabilities

as iterative versions of software are developed and fielded. Additionally, scenarios should be developed to reflect changes in national military strategy and the associated command and control structures.

6.4.1. Expanded Capabilities

At FOC, JSIMS is expected to be able to replicate activities that have generally been provided by role playing and scripting (manual intervention) events supported by legacy models. Examples of areas in which such off-line support is typically provided are logistics, intelligence, Nuclear-Biological-Chemical (NBC) warfare effects, theater missile defense (TMD), weapons of mass destruction (WMD), engineering, communications, inter/intra-theater transportation, medical, and information operations. JSIMS will need to represent higher and lower echelons of command, and U.S., allied, coalition, neutral and opposing forces, as well as accommodate and represent training with U.S. Government agencies, nongovernmental organizations (NGOs), private voluntary organizations (PVOs), and international organizations.

6.4.2. FOC Expectations

As JSIMS version 2.0 is introduced at FOC in 2003, capabilities of the system will have matured to provide the full range of training and other uses described in section 5.0 and the paragraph above. While the three scenario types discussed for application throughout introduction of the sequential versions of JSIMS will still be applicable, other scenario types and designs will evolve to take advantage of the JSIMS system capabilities, as well as in response to world political-military developments.

JSIMS will be designed to provide an operationally realistic and composable simulation environment primarily focused to provide military training at the joint task force (JTF) operational level. The operational level framework provides consistent context and definition for the development and maturation sequence of the simulation. In addition to this central theme, JSIMS will develop tools to address the interplay of tactical warfare, tailored functional resources, military operations other than war (MOOTW), national and international interfaces and operational level situations. As the JSIMS synthetic battlespace matures, it will be sufficiently robust to accommodate virtually any scenario requirements conceivable as this CONOPS is developed.

At IOC, JSIMS will selectively include capabilities at the tactical level of operations to represent small-units and individual platforms appropriate for joint operations and specialized missions. At FOC it will have the capabilities to represent strategic national and strategic theater level activities for the realistic replication of political and international factors impacting the mission assigned to the training audience.

The model will support both deliberate and crisis action planning for an operational situation. Integrated exercise design tools will facilitate construction of training events that capture the full spectrum of operations, from prehostilities or nontraditional emergency situations, as well as the more familiar phases of conflict -- deployment, employment, sustainment, and redeployment. JSIMS will provide automated methods to support scenario development, data selection, event execution, and analysis of training results (during and post execution).

6.5. JSIMS Operational Scenario Design

The "warfare and operational art" aspect of JSIMS will be instituted through the application of warfighting skills and nontraditional military engagement skills responding to events and implications within an operational scenario. The scenario is a "big picture" description of a military problem or situation that provides context for training. This setting provides both the overarching context and finite events traced to the Universal Joint Task List and CINC Mission Essential Tasks and training programs. The scenario structure can be likened to a binder containing exercise design elements.

The design binder contains tailored background material; summaries of geography, history, culture, religion, military and political information of a given region. The planner selects a region and turns to the section containing current information to continue developing the exercise context. Examples of notional current events include government agendas and actions, military and terrorist threats, ethnic and religious conflicts, and man-made or natural disasters. The binder also provides a set of short descriptive events to build toward specific training requirements. A range of examples include generic events designed to set the exercise stage for a noncombatant evacuation operation, establishment of a civil military operations center, or requirement for tracking weapons of mass destruction.

JSIMS exercise design tools and user friendly build methodology are intended to assist exercise planners to efficiently research, plan, and refine specific training events appropriate to drive joint and Service specific training requirements. The resulting JSIMS exercise design will provide a robust and challenging mission environment for the training audience.

6.6. JSIMS Operational Scenario Structure

Section 6.1 discussed the JSIMS conceptual scenario in terms of providing context which incorporates the use cases contained in the JUCL. These use cases, with their system and subsystem specifications, form a consistent framework to conceptualize the mission space used in the software development process.

6.6.1. User Templates

The developer's efforts and clear understanding of user requirements and scenario structure are key to providing the user "operational scenario design tools" addressed in paragraph 6.3. Within the overarching scenario, use cases and vignettes encompass balanced partitions of military operational requirements. They may be linked with other use cases and vignettes. Systems and operational activities, and subsystems and events divide the scenario based partitions into sequentially smaller portions, each level providing greater detail and functionality designed to serve developer and user. The two reference systems and communities are linked and mutually supportive within the scenario context. When combined, vignettes, activities, and events comprise the training templates within the JSIMS operational scenario structure.

These components are traced to functional user training requirements and conditions in the Universal Joint Task List. Individual training events contain the various entity and

behavioral threads, and form the first level of military user tools. Activities combine the events into higher order groupings, such as course of action development. Vignettes are partitions analogous to stages of a military operation. Continuing with the example, COA development is an activity within the planning vignette of the overarching scenario.

A vignette is a subset of a scenario that is generally militarily balanced and focused in time. Vignettes enable focused training of functional processes and tasks as they interrelate. A vignette may emphasize training requirements in one or more functional activities related to selected Joint Mission Essential Tasks, while the events establish and comprise finite conditions per the Universal Joint Task List. The scenario is provided as a backdrop to play out the operational concept.

The vignettes will relate to the way in which military campaigns and operations are executed. Thus, the most common exercise design scenario will structure vignettes and activities to correspond to the functions conducted during stages of a campaign or operation as specified in the corresponding plan or order. Conditions and training opportunities (events) within functional activities are linked to other functional activities represented in the scenario/vignette subset. For example, strategic lift events within the pre-hostilities deployment vignette are matrixed to force allocation events. Tailored events within this example might include mobilization of reserve civil affairs assets and personnel in anticipation of a later training requirement for the exercise of a civil military operations center (CMOC).

During exercise execution, the training audience level user will conduct initial planning and preparation based on their evaluation of the JSIMS scenario environment and history. The planning and building block event tools appropriate for use by the exercise planner and scenario design community will be transparent to this level user. Instead, the JSIMS functionality will provide a robust, seamless and realistic contextual flow through the exercise. The training audience will interpret and establish their own set of operational conditions to transition from one operational stage to another within this initial context but, as in real world military operations, the preplanned transitions and conditions are not static. JSIMS exercise design scenario tools are available to compose and tailor adhoc developments during the flow of the exercise training.

The exercise design scenario and family of tailorable JSIMS vignettes can provide the backdrop and progressive conditions against which the exercise training audience commander could execute his plans. JSIMS events can also afford opportunities for exploitation and decision making; these may be presented by the “enemy”, by environmental factors such as natural disasters, or as unforeseen situations.

6.7. Partitions by Stage of Operations

Dividing a scenario into operational stages can assist planners in thinking through an entire operation and in defining requirements. It also assists in sequentially supporting and achieving major objectives within realistic timelines and resource constraints.

The JSIMS exercise design scenario will address the following major joint operational stages: (1) Prehostilities/Predeployment, (2) Lodgment, (3) Combat/Mission Execution

and Stabilization, (4) Follow-through, and (5) Posthostilities/Mission Closure and Redeployment.

These major stage partitions of the scenario based mission take into account the expected flow of actions and decisions from beginning to end. The user may choose to begin or focus on a particular partition stage and rely on JSIMS to provide the base and linkage to preceding stages. An example might consist of an exercise focused on execution or rehearsal of a combat mission, using automated deployment events and lodgment data from JSIMS to provide sufficient STARTEX information to update the background scenario context.

6.7.1. Prehostilities/Predeployment Stage

Vignettes and activities will include deterrence actions (flexible deterrent options, FDOs) and actions to set the terms for employment and enhance friendly and limit enemy freedom of action. During this stage forces will be tailored for deployment. C4I and logistics requirements of the force will be developed based on the commander's concept of operations. This stage will also identify critical timelines required to deploy the force.

6.7.2. Lodgment Stage

Vignettes and activities provide for the movement and buildup of a decisive and appropriate military force in the operational area. In lodgment operations before hostilities and to support nontraditional military engagement, deployment will normally include movements to host nation air or sea ports. In operations conducted before and during combat, initial deployment may require forcible entry, followed by the occupation and expansion of the lodgment area.

6.7.3. Decisive Combat/Mission Execution and Stabilization Phase

Decisive combat or nontraditional engagement and stabilization phase vignette activities focus initially on a rapid buildup of joint force capabilities. The appropriate sequencing of forces into the operational area can contribute to the stabilization of the situation. The resulting stabilization could serve as a deterrent. If deterrence fails, deployment of forces will permit JTF commanders (CJTFs) to build up full dimensional capabilities rapidly, and to conduct decisive action as early as possible. This decisive action is focused to build an operational capability to achieve NCA and CINC objectives.

6.7.4. Follow-through Phase

Vignettes and specific activities will be focused on synchronizing the joint force events to bring the military operations to a successful conclusion. Part of the effort is devoted to ensure that the threat or human stress element in a nontraditional mission do not undo the gains of the preceding phase. The essence of this phase is ensuring that the results achieved in the earlier phase are maintained. In this phase joint forces may conduct operations in support of other governmental agencies in operations other than war

(MOOTW) to assist in meeting war termination objectives, and in the conduct of designated nontraditional missions such as disaster response and humanitarian relief.

6.7.5. Posthostilities/Mission Closure and Redeployment Phase

The vignettes and activities will center on setting the stage to conclude the military role in the situation. In this phase the CJTF will ascertain posthostilities requirements and identify who should accomplish the final conflict or mission termination actions. Once the national military objectives are reached this phase will focus on redeploying the joint force from the operational area as the military mission has been accomplished and the forces are no longer needed in the objective area.

6.8. Summary

The initial JSIMS development scenario is a JTF level operation designed to execute a MTW mission. It currently focuses on those aspects of a military situation needed to provide a framework and context for the JSIMS Conceptual Model of the Mission Space (JCMMS). This Scenario provides an operational foundation that will permit development of the object oriented threads needed for software development and form the baseline to support Verification, Validation, and Accreditation traceability to user requirements.

The Scenario is a living document that will be expanded and altered as necessary to meet JSIMS software development requirements as the program evolves. The Scenario will support JSIMS users and developers with the ability to link thread development to mission tasks and trace them to military operational training requirements.

7. Summary of Impacts

Anticipated impacts of JSIMS development and fielding can be broken generally into operational and organizational categories. These impacts will have varying effects on users, acquirers, developers, and support agencies during the development effort, implementation of fielding plans from IOC through FOC, and after FOC when follow-on versions of JSIMS are introduced. These impacts may emerge in development or modification of databases, establishment of training programs for support personnel, parallel operation of the new and existing systems during testing of the new system, and management of development and fielding activities.

7.1. Operational Impacts

In order to meet the requirements of JSIMS IOC, there will be some initial costs in training a start-up cadre of technical support and simulation operations personnel and controllers at one or more of the operating sites for the system. In light of the reduced numbers of personnel and time required for training at steady state operations, the long term savings will more than offset the start-up costs involved. The technical and operational skills required for these personnel will be similar to those required for

technical and operational support of the legacy models and simulations they will replace (e.g., 1998 JTC). At IOC, JSIMS is expected to provide the user with similar training simulation capabilities that are available in the legacy models. However, it should provide those capabilities with fewer personnel and time resource investments throughout the implementation of the joint exercise life cycle (JELC). This will result in overall cost savings and more effective and efficient training. Additionally, it is envisioned that in the long term JSIMS will provide a capability through operational C4I systems that will facilitate distributed operational mission rehearsals, resulting in time and cost savings.

7.2. Organizational Impacts

Because some simulation centers may be “dual use” for a period of time after IOC, as they support some exercises with legacy models and others with JSIMS, there may be a temporary increase in personnel manning until the legacy models are fully displaced. Additionally, there may be funding impacts as centers synchronize equipment purchases to support implementing JSIMS while phasing out legacy support and investing in communications network infrastructure to support distributed simulation operations.

At IOC, some of the organizational structure that is currently in place to implement the introduction plans for JSIMS will no longer be required and can be eliminated. There will continue to be a requirement for the monitoring and management of new capabilities and improvements; however, the overall management organization will change as the system changes. Similarly, some of the periodic meetings and conferences that are currently necessary will no longer be required and can be eliminated. There will be a requirement to establish an effective “model manager” and an effectiveness monitoring organization for JSIMS. The resource requirements for these functions should be more than offset by the reduction in management positions and organizational functions associated with the legacy models JSIMS will replace.

7.3. Impacts During Development

There will be an increase in numbers of personnel required overall in M&S management and operations during the period of parallel operations of some legacy models and JSIMS, but this will be a temporary situation until the legacy models are phased out. As JSIMS reaches maturity at FOC and in subsequent versions, increased technical complexity will require some increase in personnel support requirements, both in numbers and in the technical skills required to support operations, over those required at IOC. Nevertheless, the total number of personnel required in the M&S management and operations community will decrease substantially with full implementation of JSIMS plans and elimination of the simulations it will replace.

8. Analysis of JSIMS

8.1. Advantages of JSIMS

Major advantages of JSIMS will accrue in its presentation of a robust, comprehensive synthetic training environment without excessive requirements for personnel, time, and other resources. It will also possess significant military activity training capabilities that do not exist in current legacy models, and it will significantly enhance the implementation of the joint exercise life cycle (JELC). Some of the currently envisioned advantages that will accompany the fielding of JSIMS follow:

- JSIMS will portray the full range of military operations with a high degree of resolution and fidelity, including those functions that have not been fully integrated within the legacy simulations, such as intelligence, space activities, transportation, logistics, special operations, and MOOTW.
- The combat adjudication process in JSIMS will simulate complete operational environments that will satisfy both joint and Service training requirements.
- JSIMS will have access to certified data repositories, which will facilitate efficient, cost effective database construction. JSIMS model components will have compatible database formats to eliminate the “ripple effect” of a single model’s database change requiring additional changes in other models. This is intended to reduce coordination requirements prior to each training event. JSIMS will incorporate standardized tools to automate archiving, cross checking, manipulation, retrieval, and transfer of data elements.
- It is envisioned that JSIMS will incorporate a standard method to implement consistent, natural, or physical environmental effects.
- At FOC, JSIMS will accurately simulate the full spectrum of MOOTW scenarios, which have been the major focus of US military operations since the Gulf War and which are likely to remain so for the foreseeable future. It will also enable effective simulation of social, economic, and political factors affecting missions across the full range of military operations, none of which are currently modeled adequately to support joint training.
- JSIMS will significantly reduce the numbers of support personnel currently required for Service and joint exercises by automating the actions of higher, adjacent, and lower echelons of friendly forces that are not actually participating in the exercise, as well as personnel who are currently required to simulate opposition force actions. Substantial personnel savings are also anticipated in the level of personnel augmentation required to operate computer systems and to enter manually the plans, instructions, and orders to support the training scenario.
- By FOC, JSIMS will eliminate much of the difficulty and expense involved in making significant enhancements to existing models, as it will have all the capabilities necessary to support evolving joint and Service training requirements. The open systems environment of JSIMS is also expected to moderate or eliminate the integration difficulties associated with proprietary software, limited graphics capabilities, non-modular design, and hard-coded data representations that exist with legacy models.

- JSIMS will provide users the ability to interact freely with each other through a composable simulation environment. This will be facilitated through JSIMS' complete joint and Service functionality, interfaces with existing C4I systems, and a common supporting infrastructure that will significantly reduce the need to undertake independent simulation development projects that exacerbate the inability to interoperate and ultimately raise costs and degrade performance.
- JSIMS is intended to link all the phases of military operations, resulting in increased emphasis on mobilization, force deployment, sustainment, and redeployment issues that impact the employment stage of warfare. The synergistic effect of these factors has been largely ignored in past employment-centric exercises.
- JSIMS will interface with existing C4I systems without specialized equipment to display geographic and situation information and accommodate human engineering factors to enable the training audience to participate in JSIMS supported events on equipment with which they are already familiar. This participation will be facilitated without significant additional training on equipment and interfaces. JSIMS will be linked to virtual and live entities, adding substantial realism to the operational environment presented to the training audience.
- JSIMS will also incorporate a complete array of trainer and provider tools to facilitate efficient design, planning, preparation, execution, and post-exercise activities for training events. Among the activities envisioned to be supported with automation tools are rapid core scenario generation; MSEL development; OPFOR campaign plan development; JECG architecture and control plan development; academic seminar training plans development; AAR operations concept and collection management plan development; and AAR data collection, analysis, and graphics preparation. It will also facilitate preparation of lessons learned in the various formats that may be required for feedback into the JTS to improve CINCs' JTPs and to streamline various processes in the JELC for continuous improvement in future exercise events.

8.2. JSIMS Disadvantages/Limitations

As with all newly developed military equipment and software systems, there are technological risks involved in the development and fielding of JSIMS. The sequential fielding of JSIMS versions will be pursued in such a way as to mitigate those risks, but they cannot be fully eliminated. The most probable result of insufficient mitigation of the risks associated with fielding of JSIMS will be possible delays in IOC and potential delays in the sequencing of capabilities peculiar to follow-on versions after IOC.

Should such delays occur, due attention must be paid to avoid potential gaps in joint and Service training support as legacy models are phased out. To assure such gaps do not occur, the legacy models must be maintained until the replacement functions of JSIMS are brought on-line, requiring continued staffing of them at the same time JSIMS must be staffed. For example, if a particular capability in JSIMS is desired by a Service at IOC and it cannot be delivered until a later version, another model with that capability may be retained to provide that capability past its programmed phase-out date. This will result in higher overall levels of maintenance and support personnel than will be required after achievement of the full spectrum functionality programmed for JSIMS at FOC. The JSIMS Transition Plan will be designed to

minimize the probability of functionality gaps, and it will be updated to address these issues as they arise throughout the transition from legacy models to JSIMS.

8.3. Alternatives and Trade-Offs

Until recently, periodic upgrades to extend M&S capabilities have been pursued to meet joint, Service, and other use demands for simulation support. This has been an effective method of providing improvements within the constraints of that technology, but the high costs associated with developing continued marginal improvements in those legacy models have made continuation of that alternative unacceptable.

Continued upgrades were considered for JTC, JTLS, and JCATS (the replacement simulation combining the capabilities of JCM and JTS). In the final analysis, the escalating cost of continued upgrades to those stovepipe models and the emergence of promising new simulation technologies, development of JSIMS was selected as the preferred alternative for achieving added functionality and efficiency in supporting both joint and Service training events. The JSIMS Transition Plan reflects the schedule for continued maintenance and final upgrades of legacy models as JSIMS reaches IOC and termination of the legacy models as improved versions of JSIMS are fielded.

ANNEX A— JSIMS Development Scenario

A.1. Background

During the design and planning of a simulation-supported event, planners develop the framework for a relevant training experience tailored to the training audience. Development of tools embedded in JSIMS, such as the scenario and supporting database information contained in the common Modeling and Simulation Resource Repository (M&SRR), combined with current assets such as the Joint Exercise Management Package, will facilitate exercise planning team efforts to compose and tailor efficiently the JSIMS event to the specific and detailed training needs of the exercise sponsor.

The JSIMS development build scenario is a notional example of the type of complex international setting the JSIMS user community will be able to develop. For the purposes of JSIMS development, the scenario is not intended to represent a crisis that is expected to play out on the world scene. It is for program development purposes only and any similarity to a real world situation is coincidental.

A.2. Political-Military and Geographic Setting - Focused and Sufficient

The Southwest Asia region was selected as the geographic area for this notional initial JSIMS development build scenario. This scenario provides a realistic situation, events, notional forces, and a physical environment that will support developer actions in a sufficiently broad but focused context.

The mission would draw forces from many US war fighting commands, supporting commands, and each of the Services. Order of battle data for US and notional coalition forces is provided at Annex B, as is notional threat order of battle data.

The setting provides the challenge of representing multiple sides (coalitions and combined operations as well as government agencies, international and private organizations, and non-governmental organizations). The scenario script can be expanded to encompass multiple factions within the opposing force side. It can also represent the operational problems posed by non-combatant civilians, hostages, as well as refugee populations and displaced persons.

The development build scenario is designed to provide an international situation that has national security implications requiring the application of military skills and forces across and within the JSIMS domains. The Defense Planning Guidance Illustrative Scenarios for Planning and the tenets of Joint Vision 2010 were reviewed during this effort. In an effort to attain cost and time savings in design efforts, the JSIMS build scenario was developed with similar characteristics to the Joint Warfare System (JWARS) scenario.

A.3. Development Scenario

Although the development build scenario is not explicitly linked to an actual world situation or event, it is deliberately created at the unclassified level and provides a setting that is plausible,

realistic, and reflects the actual work and resulting products of the exercise design and planning process.

A.3.1. Middle East MTW Training Audience

The structure of the notional CINC/JTF level training audience is displayed at figure A.1.

JSIMS Middle East MTW Scenario - CINC and JTF Training Audience		
JTF Component	Provider	Response Cell Location
Joint Task Force (JTF)	CINCCENT and Staff	Centralized Location, possibly USACOM's JTASC facility, Suffolk, Virginia
Navy Forces (NAVFOR) NAVCENT, Commander, 5th Fleet and Staff	Commander, Carrier Group (COMCARGRU) 8 and Staff	Rear Headquarters, MacDill, Air Force Base, Tampa, Florida and or Camp Blanding, Florida
Air Forces (AFFOR)	Commanding General, 9th Air Force and Staff	Shaw Air Force Base, Sumter, South Carolina
Marine Forces (MARFOR)	Commanding General, III Marine Expeditionary Force (MEF) and Staff	Okinawa, Japan and Det Rear, Camp LeJeune, North Carolina
Army Forces (ARFOR)	Commanding General, 18th Airborne Corps and Staff	Fort Bragg, Fayetteville, North Carolina

Figure A.1 -- CINC and JTF Training Audience

A.3.2. Middle East MTW Training Audience - Organizational Relationships

The organizational relationships of the training audience are displayed at Figure A.2.

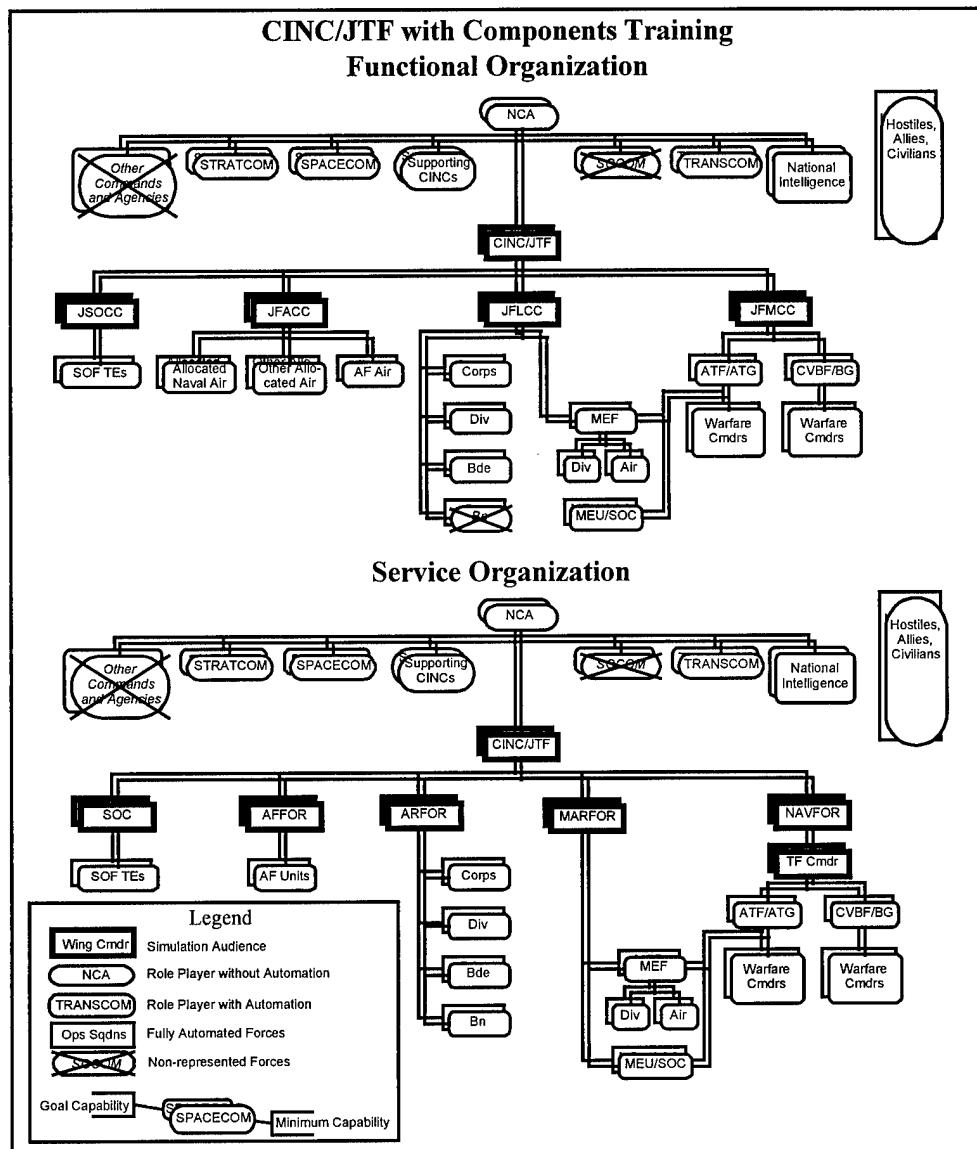


Figure A.2 -- CINC/JTF Functional and Service Organization

A.4. JSIMS Training Objectives for Initial Development

As sequential versions of JSIMS are fielded after IOC, training objectives will be developed as described in chapter three. For this initial development, however, the following training objectives have been developed as a notional representation of what is required for an exercise training objective for the training audience.

Joint tasks (essential and supporting) are developed from the Universal Joint Task List (UJTL) and once conditions (taken from the scenario) and standards (delineated by the exercise director, CINC or JTF commander) are added, this becomes a training objective for this particular exercise. The development scenario does not attempt to replicate the information normally derived from various reference CINC and component documents normally used in the

development of training objectives. However, it demonstrates the linkages that occur during the exercise design process.

The initial JSIMS event will be conducted within the context of the scenario as described in this Annex, for which it is appropriate to use training objectives as listed below. Each of these training tasks refers to common conditions which are listed later in this section. Some of these training tasks will not pertain to all of the training audience, rather a specific component, board, cell, center, or section of the staff.

References on how to perform each of these tasks are listed in the UJTL and are from current joint and service publications. In applying the UJTL to the requirements-based joint training process, a number of basic terms apply which are shown in figure A.3.

Term	Definition
Mission	The task, together with the purpose, that clearly indicates the action to be taken and the reason therefor.
Essential	Absolutely necessary; indispensable; critical.
Task	A discrete event or action, not specific to a single unit, weapon system, or individual that enables a mission or function to be accomplished.
Condition	A variable of the operational environment or situation in which a unit, system, or individual is expected to operate that may affect performance.
Standard	The minimum acceptable proficiency required in the performance of a particular task under a specified set of conditions. Standards are established by a joint force commander.
Joint Mission Essential Task (JMET)	A task selected by a joint force commander from the Universal Joint Task List (UJTL) deemed essential to mission accomplishment.
Joint Mission Essential Task List (JMELT)	A list of joint tasks considered essential to the accomplishment of assigned or anticipated missions. A JMELT includes associated conditions and standards and may identify command-linked and supporting tasks.
Supporting Task	Specific activities that contribute to the accomplishment of a joint mission essential task. Supporting tasks are accomplished at the same command level or by subordinate elements of a joint force (i.e., joint staff, functional components, etc.).

Figure A.3 -- UJTL Definition of Terms

The essential tasks below are in bold and the supporting task in each case is in italics. The task conditions key is located in A.4.1.

ST 1.1.1 - Process Requests for Forces to be deployed. *Validate and coordinate movement requests with supporting agencies to determine resources and assets available. Prepare movement orders.* Conditions: (15-25) Standards: (a) Movement requests processed in sufficient time to support the campaign plan, (b) Movement orders prepared and issued in accordance with JTF SOP.

ST 1.1.3 - Conduct Intratheater Deployment of Forces. *Coordinate and prioritize movement of US and Multinational forces within theater. Determine phasing requirements in accordance with assets available. Prepare deployment orders in accordance with JTF SOP.* Conditions (3,4,15-17, 19-25). Standards: (a) Uninterrupted movement conducted in support of campaign plan. (b) Multinational and coalition movement assets and shortfalls identified and resolved in a timely manner. (c) Deployment orders prepared and issued in accordance with JTF SOP.

ST 1.1.4 - Provide Command and Control of Deploying Units. *Insure that the required information and format of deployment orders are correct. Maintain requirements that implement and monitor command and control instructions as listed in deployment orders.* Conditions; (3, 6-14). Standard: Control of forces during phasing is maintained at all times.

ST 2.2 - Collect Theater Strategic Information. *Insure collection assets provide timely information to maintain a current target list. Assess significant battle damage of enemy targets.* Conditions: (1-5, 11, 14, 20-22, 25). Standards: (a) Collection requirements on targets processed in a timely manner. Disseminate a BDA assessment within 12-36 hours of collection.

ST 2.4 - Produce Theater Strategic Intelligence and Prepare Intelligence Products. *Maintain enemy situation and order of battle. Respond to requests for targeting and BDA information. Respond to requests for intelligence for planning purposes.* Conditions: (1, 2, 11, 14, 25). Standards: (a) Enemy order of battle maintained in a timely manner. Target and BDA information requests processed in a timely manner. (c) Intelligence information requests processed in a timely manner.

ST 2.5 - Disseminate and Integrate theater Strategic Intelligence. *Respond to requests for strategic intelligence products. Provide follow-on intelligence support to theater strategic planners and decision makers.* Conditions: (1-4, 6-14, 20). Standards: (a) Provide prompt and comprehensive transmission, in peace and war, of theater-produced intelligence products. (b) Provide intelligence inputs in response to queries based upon furnished intelligence products or the evolution of events.

ST 4.2.2 - Provide Health Services. *Provide health service support in preparing theater forces for joint operations and theater level campaigns. Manage the theater joint blood program. Coordinate patient evacuation from the AOR. Monitor and adjust preventive medicine plan.* Conditions: (1, 6-13, 17-19, 21, 22). Standards: (a) Ensure coordination occurs between the theater joint blood program office and the armed services blood program office. (b) Ensure that a theater and joint patient movement requirements centers are formed and operated in accordance with JP 4-02. (c) Ensure sufficient medical capabilities exist to support campaign plan.

ST 4.2.3 - Reconstitute Theater Forces. *Take extraordinary actions to restore combat-attrited units in the theater to desired level of combat effectiveness. Coordinate CONUS/theater personnel replacement systems with service components.* Conditions: (1-14, 23-26). Standards: (a) Ensure no significant shortage of personnel that effects the ability of the components to accomplish their mission. (b) Ensure that planning forces to counter the emergence of a global threat has occurred.

ST 4.3 - Distribute Supplies/Services for Theater Campaign and COMMZ. *Establish a Joint Movement Center to coordinate all means of transportation to support campaign plan. Provide supplies and services for theater forces. Implement theater/joint operations area transportation policy.* Conditions: (3, 4, 22, 24). Standards: (a) Courses of action for logistics movement developed and analyzed as required. (b) Recommendations provided to JFC to meet projected shortfalls in intratheater lift capability as required. (c) Movement of equipment, supplies, and personnel meets CINC's timeliness for execution of campaign plan.

ST 8.1.3 - Develop Headquarters or Organizations for Coalitions. *Validate the F2C2 staff functions and interaction with the battle staff in support of the campaign plan. Educate and familiarize the battle staff with the F2C2 mission. Validate augmentee Manning in support of the campaign plan. Validate F2C2 overall Manning in support of the campaign plan.* Conditions: (3, 4, 6-15). Standards: (a) F2C2 staff provides continuous support for the maneuver and sustainment of coalition forces. (b) CINC's battle staff manifests a complete appreciation for the mission of the F2C2 by staffing and coordinating 90% of coalition issues with the F2C2 staff. No later than the completion of the second exercise stage, 95% of all staff procedures are standardized. 90% of augmentee and overall F2C2 Manning are present or accounted for during the exercise.

OP 1.1 - Conduct Operational Movement. *Formulate request for strategic deployment to the theater of operations/JOA. Conduct theater of operations/JOA reception, staging, onward movement, and integration.* Conditions: (1-14, 21-24). Standards: (a) Deployment request should be consistent with joint force command's campaign plan. (b) The staff should ensure centers are established to receive and process equipment and personnel in a timely manner in accordance with JTF SOP. (c) US and coalition forces unimpeded by host nation reception services.

OP 1.2 - Conduct Operational Maneuver. *Transition joint forces to and from tactical battle formations. Concentrate forces in theater of operations/JOA. Plan and execute show of force. Plan and execute demonstration to draw attention and forces of an adversary from the area of major operations.* Conditions: (1-4, 6-15, 20, 23-25). Standards: (a) Determine when, where, and for what purpose major forces will be employed, consider commitment to or withdraw from battle, the arrangement of battles, and major operations to achieve operational relationships, policies, procedures, and options for C2 of joint air operations through designation of a JFACC or the use of the JFC staff. (b) Use available assets to provide the minimum level of sustainment to deployed forces. (c) During amphibious operations, exploit the element of surprise and capitalize on enemy weaknesses by projecting combat power at the most advantageous location and time. (d) Provide guidance for the organization, command and control, and mission selection pertaining to SOF.

OP 2.2 - Collect Operational Information. *Collect information on operational situation to include significant enemy information on force strength, vulnerabilities and locations. Provide surveillance and reconnaissance support to combatant commanders and national level agencies.* Conditions: (1, 2, 11-14, 16, 18, 20, 25). Standards: (a) Employ joint force organic intelligence resources to obtain general military intelligence (GMI) in support of the joint force commander's decision making process and operational requirements. (b) Develop and maintain intelligence databases capable of meeting operational intelligence requirements. (c) Ensure that positive ID is maintained on friendly forces.

OP 2.4 - Produce Operational Intelligence and Prepare Intelligence Products. *Evaluate, integrate, analyze, and interpret operational information for credibility, reliability, applicability, and accuracy. Determine enemy's operational capabilities, courses of action and intentions. Provide indications and warning for theater of operations/JOA.* Conditions: (1, 2, 11-14, 16, 18, 20, 25). Standards: (a) Provide tailored all-source intelligence analysis support to joint operations in such a way as to ensure the correlation of new data with the existing database and the continuous assessment of the effectiveness of the collection strategy to meet evolving intelligence needs. (b) Assist in identifying and determining operational objectives by providing the joint force commander with a clear, comprehensive understanding of the adversary's intent, objectives and centers of gravity. (c) Further support to operational requirements is provided through the development and maintenance of a tailored GMI database.

OP 3.1 - Conduct Joint Force Targeting. *Establish joint force targeting guidance to include prioritizing targets. Assign joint/multinational operational firepower to operational targets consistent with joint force command's guidance. Evaluate and choose operational targets for attack to achieve optimum effect on enemy decisive points and centers of gravity. Publish tasking orders for employment of air assets and other means. Determine the overall effectiveness of joint and multinational forces employment in operational objectives.* Conditions: (3, 4, 6-14, 20, 24-25). Standards: (a) Select targets and match the appropriate response to them taking account of operational requirements and capabilities. (b) Comply with international law, the law of war, international agreements and conventions, and NCA approved ROE. (c) All components involved in targeting, should establish procedures and mechanisms to manage the targeting function. (d) Transmit a daily air tasking order that maximizes the use of all firepower assets. (e) JFCs establish broad planning objectives and guidance for attack of enemy strategic and operational centers of gravity and interdiction of enemy forces. (f) Set priorities, provide targeting guidance, and determine the weight of effort to be provided to various operations. (g) When established, the JTBC operates at the macro level and ensures targeting nominations are consistent with the JFC establish broad planning guidance. (h) Develop an unconstrained prioritized list of potential targets which reflects relative importance of targets to the enemy's ability to wage war. (i) Consider target system characteristics, target linkage, and interdependence. (j) Identify key target systems that are relevant to objectives and guidance and suitable for disruption, degradation, neutralization, or destruction. (k) Identify critical nodes, prepare preliminary documentation, validate the target, identify recommended aim points for attack, and develop a potential prioritized target list. (l) Analyze what is known about the damage inflicted on the adversary to determine what

physical attrition the adversary has suffered; what effect the efforts have on the adversary's plans or capabilities; and what, if any, changes or additional actions are required to meet campaign objectives. (m) The CA effort should be a joint program supported at all levels.

OP 3.2 - Attack Operational Targets. *Attack operational land and sea targets with available joint and multinational operational firepower. Engage operational land, sea, and air targets with nonlethal joint and multinational means designed to degrade, impair, disrupt, or delay the performance of enemy operational forces, tasks and facilities.* Conditions: (3, 5, 9, 11, 14, 20, 24, 25). Standards: (a) Employ all available joint and multinational firepower to delay, disrupt, destroy or degrade enemy operational forces or critical tasks and facilities to effect the enemy's will to fight. (b) Employ EW to control the electromagnetic spectrum or to attack enemy systems; include optical, infrared, and directed-energy means. (c) Employ offensive information warfare activities. (d) Consider use of SOF when non-lethal means are insufficient and conventional means are not feasible. (e) Degrade, impair, disrupt, or delay performance of enemy operational forces, tasks, and facilities. (f) Synchronize interdiction and maneuver, as complementary operations, to assist commanders in optimizing leverage at the operational level. (g) Synchronize and integrate close air support with surface fires; achieve the desired effect without suspending the use of any of the supporting arms or unnecessarily delaying the scheme of maneuver, and protect aircraft from the effects of friendly surface fire.

OP 5.1 - Acquire and Communicate Operational Level Information and Maintain Status. *Send and receive operationally significant information and data from one echelon of command to another by any means. Direct, establish or control the means used in sending or receiving operational information of any kind. Determine the critical information that the commander requires to understand the flow of operations and to make timely and informed decisions. Maintain operational information and force status. Monitor the strategic situation.* Conditions: (1-5, 9, 11, 14-16, 18-22, 24-25). Standards: (a) Combatant command planners develop peacetime assessments that ease transition to crisis or war as well as to post-conflict. (b) Peacetime intelligence and logistic assessments are essential for force projection operations and rapid transition to combat operations. (c) When directed by the NCA to conduct military operations, the combatant commander refines peacetime strategies and modify existing plans or develop campaign plans as appropriate. (d) The result, expressed in terms of military objectives, military concepts, and resources, provides guidance for a broad range of activities. (e) Modern intelligence collection systems accumulate vast amounts of information. (f) To be useful, the information must be relevant, accurate, analyzed, formatted, and disseminated in a timely manner to the appropriate user. (g) The information must be appropriately classified and sanitized to the degree necessary to allow dissemination to the appropriate user level. (h) The commander specifies the critical information needed to support a decision-making process to retain the initiative. (i) The information may be derived from one or more of three broad information categories of friendly, enemy, and environmental. (j) This includes identification, management, and promulgation of critical information requirements to the joint force staff and components.

OP 5.2 - Assess Operational Situation. *Evaluate information received through reports or the personal observations of the commander on the general situation in the theater of operation and conduct of the campaign or major operation. In particular, this activity includes deciding whether different actions are required from those that would result from the most recent orders issued. This includes evaluating operational requirements of subordinate task forces and components.* Conditions: (1-5, 14-15, 18, 20-22, 24-25).

Standards: (a) The nature, scope and tempo of military operations continually changes, requiring the commander to make new decisions and take new actions in response to these changes. (b) Although the scope and details will vary with the level and function of the command, the purpose is constant: analyze the situation and need for action; determine the course of action best suited for mission accomplishment; and carry out that course of action, with adjustments as necessary, while continuing to assess the unfolding situation. (c) Combatant commanders' plans provide strategic direction: assign missions, tasks, forces, and resources; designate objectives; provide authoritative direction; promulgate rules of engagement(approved by the NCA); establish constraints and restraints; and define polices and concepts to be integrated into subordinate or supporting plans. (d) Branches are options built into the basic plan. Such branches may include shifting priorities, changing unit organization and command relationships, or changing the very nature of the joint operation itself. (f) Branches add flexibility to plans by anticipating situations that could alter the basic plan. Such situations could be a result of enemy action, availability of friendly capabilities or resources, or even a change in the weather or season within the operational area.

OP 5.3 - Prepare Plans and Orders. *Make detailed plans, staff estimates, and decisions for implementing the theater combatant commander's theater strategy, associated sequels, and anticipated campaigns or major operations. Plans and orders address, among other things, centers of gravity, branches, sequels, culminating points, and phasing. Planning includes organizing an effective staff, structuring and organizing the force, considering multinational capabilities/ limitations, and cross-leveling or balancing Service component, joint, and national C⁴ means.* Conditions: (3, 4, 6-14, 20-24). Standards: (a) Synchronize operations by establishing command relationships among subordinate commands, describe the concept of the operations, assign tasks and objectives, and task-organize assigned forces. (b) Campaign planning can be started prior to or during deliberate planning, but is not completed until crisis action planning. (c) Prepare OPORDs under joint procedures during crisis planning. (d) Plans should address specific missions and tasks for subordinate joint or multinational task forces, Service and functional components and supporting commands and agencies. (e) Plans should specify main effort(s) and supporting and supported relationships by phase. (f) Planning also should address rules of engagement for force employment. (g) This activity includes determining solutions to operational level needs

OP 5.4 - Command Subordinate Operational Forces. *Promulgate the interrelated responsibilities between commanders, as well as the authority of commanders in the chain of command. Clear delineation of responsibility among commanders up, down, and laterally ensures unity of command which is a foundation for trust, coordination, and the teamwork necessary for unified military action. All commanders must understand their mission, their contribution to achievement of the commander's concept and intent, and their relationship to attainment of a higher or supported commanders operational objectives. This facilitates maximum decentralized conduct of campaigns and major*

operations utilizing either detailed or mission-type plans and orders as the situation and time permit. Arrange land, air, sea, and space operational forces in time, space, and purpose to produce maximum relative combat power at the decisive point. This activity includes the vertical and the horizontal integration of tasks in time and space to maximize combat output. Synchronization ensures all elements of the operational force, including supported agencies' and nations' forces, are efficiently and safely employed to maximize their combined effects beyond the sum of their individual capabilities. This includes synchronizing support to a supported command. Synchronization permits the friendly commander to get inside the enemy commander's decision cycle. Conditions: (3-14, 22-24). Standards: (a) Organize and employ commands and forces as the combatant commander considers necessary to accomplish the assigned mission. (b) COCOM is the authority to perform those function of command over assigned forces including assigning tasks designating objectives, providing authoritative direction, joint training, and logistics necessary to meet mission requirements. (c) Generate decisive joint combat power through the integration of all US military capabilities and with other nations and organizations as required. (d) Synchronizing interdiction and maneuver provides a dynamic concept available to the joint force. (e) The synergy achieved by integrating and synchronizing interdiction and maneuver assists commanders in optimizing leverage at the operational level.

OP 5.5 - Organize a Joint Force Headquarters. *Organize a headquarters for the command and control of designated and organized joint and multinational forces under the duly authorized, single, joint force commander. Conditions: (1-15, 20-25).*

Standards: (a) The first principle in joint force organization is that JFCs organize forces to accomplish the mission based on the JFC's vision and concept of operations. (b) Key considerations are unity of effort, centralized planning, and decentralized execution. (c) Joint force organizations need to consider interoperability with multinational forces. (d) Simplicity and clarity of expression are critical.

OP 5.7 Coordinate and Integrate Joint/Multinational and Interagency Support. *Coordinate with elements of the joint force, allies/coalition partners, and other government agencies to ensure cooperation and mutual support, a consistent effort, and a mutual understanding of the joint force commander's priorities, support requirements, concept and intent, and objectives. Conditions: (3-5, 15-17, 19-26). Standards: (a) Ensure the joint force commanders priorities, support requirements, concept, interest, and objectives are clearly understood and that US, allied, and friendly nations act in concert as a single and seamless force to generate decisive joint combat power. (b) Coordinate coalition support activities to provide the combined force commander the means to acquire coalition force status and capabilities.*

OP 6.1 - Provide Operational Aerospace and Missile Defense. *Protect operational forces from air attack by direct defense and by destroying the enemy's air attack capacity in the air. This will include the use of aircraft, interceptor missiles, air defense artillery, and weapons not used primarily in an air defense role. Provide joint and multinational operational aerospace defense. Provide airspace control.*

Conditions: (3, 4, 11, 14, 18, 20, 21, 25, 26). Standards: (a) Disseminate TMD voice warning consistent with available and capable organizations and equipment, direct receipt of voice warning is preferred. (b) JFC TMD cell must maintain theater-wide TMD situational awareness 90% of the time by multiple means. (c) Recommend

improvements on theater TMD policy and guidance to the JFC TMD cell. (d) The JFC TMD cell delivers recommendations in a timely manner to the theater JTCB for discussion and decision.

A.4.1. Scenario Task Conditions

Common Conditions that pertain to the above training tasks are listed below. The numbers against these conditions cross reference to the numbers in parenthesis after each task. The conditions are initial starting points and become dynamic once the exercise starts.

1. JTF will conduct operations in an arid, austere environment, with severe climatic conditions, creating harsh conditions under which military personnel and equipment will operate. (Note: Based on UJTL conditions C 1.3.1 (arid), C 1.3.1.3.1 (hot), C 1.3.1.3.5 (very low), and C 1.3.2 (low).)
2. Three maritime choke points (Strait of Hormuz, Bab El Mandeb, and Suez Canal) coupled with the confining characteristics of the Red Sea and Persian Gulf may impact the CINC/JTF's ability to rapidly respond to the crisis. (Note: Based on UJTL conditions C 1.1.3.4 (extensive) C 1.2.1.7 (confined), C 2.5.1.4 (contested), and C 2.7.3 (partial).)
3. CINC CENT will conduct operations integrating multinational commands and forces to accomplish coalition objectives. (Note: Based on UJTL conditions C 2.1.1.2 (partial), C 2.1.1.4 (multinational), C 2.1.1.7 (limited), C 2.2.6 (some), and C 2.3.1.2 (partial).)
4. CINC CENT will provide critical support to nations in the AOR in terms of security assistance, forward presence of military forces, and will deploy/employ military forces rapidly to the region to maintain regional peace and stability. (Note: Based on UJTL conditions C 2.1.1.3 (overt), C 2.1.1.4 (multinational), C 2.1.5.1 (short), C 2.3.1 (multinational), C 2.5.1.2 (minimal), and C 2.5.3.1 (limited).)
5. CINC CENT will conduct operations supported by secure yet long intertheater lines of communication (LOCs) from the Continental United States (CONUS) to the AOR. (Note: Based on UJTL conditions C 2.1.4.5 (long), C 2.5.1 (good), C 2.5.1.3 (secure), C 2.5.2.1 (robust), C 2.5.2.2 (limited) and C 2.5.2.3 (little or no).)
6. Staff officers have required knowledge and skills necessary to perform in a staff section/board/center/cell. (Note: Based on UJTL conditions C 2.2.4 (high), C 2.2.4.5 (normal), and C 2.3.1.3 (moderate).)
7. Section/boards/centers/cells are properly equipped to perform their tasks. (Note: Based on UJTL conditions C 2.2.5.1 (abundant), C 2.2.5.2 (abundant), and C 2.2.6 (high).)
8. Sections/boards/centers/cells are properly formed (organized). (Note: Based on UJTL conditions C 2.2.7 (moderate), C 2.3.1.3 (moderate) and C 2.4.3 (mature).)
9. Headquarters support functions are in place. (Note: Based on UJTL conditions C 2.5.4 (robust) and C 2.8.1 (adequate).)

10. Coordination procedures are established and understood by all members of a staff's section/board/cell/centers. (Note: Based on UJTL conditions C 2.3.1.2 (partial), C 2.3.1.3 (moderate), C 2.3.1.4 (partial) and C2.3.1.6 (continuous)).
11. All guidance/directives/orders/intelligence summaries that would be available are available to the appropriate section/board/center/cell. (Note: Based on UJTL conditions C 2.3.2.1 (mission orders), C 2.3.1.8 (unrestricted) and C 2.2.5.2 (abundant)).
12. All required section/board/center/cell training has been completed. (Note: Based on UJTL conditions C 2.3.1.3 (high) and C 2.2.4 (high)).
13. All sections/boards/centers/cells have knowledge of own force capabilities and limitations. (Note: Based on UJTL conditions C 2.2.5 (abundant) and C 2.3.1.3 (high)).
14. All sections/boards/centers/cells have knowledge of enemy capabilities and limitations as appropriate. (Note: Based on UJTL conditions C 2.4.2 (abundant) and C 2.4.5 (moderate)).
15. DOD media pool is deployed and dissolved. (Note: Based on UJTL condition C 3.1.1.5).
16. Joint Information Bureau is established and operational. (Note: Based on UJTL conditions C 2.2.3 (adequate), C 2.2.4 (high), C 2.2.5.2 (abundant), and C 2.3.1.8 (unrestricted)).
17. Army Reserve Civil Affairs personnel have been notified of call-up and active duty Civil Affairs liaison personnel have been deployed to establish the scope of requirements for a Civil Military Operations Center. (Note: Based on UJTL condition C 2.1.1 (clear), C 2.1.1.3 (overt), C 2.1.1.5 (cooperative), C 2.1.1.6 (major)and C 3.1.3.3.1 (partial)).
18. Respective environmental and combat service support specialty units have been notified of pending deployment. Critical assets include water purification and transportation units, oil spill and environmental decontamination specialists, and chemical detection and decontamination units. (Note: Based on UJTL condition C 2.1.1 (clear), C 2.1.1.3 (overt), C 2.1.1.5 (cooperative), C 2.1.1.6 (major), C 2.2.1 (strong), C 2.5.1.1 (full), C 2.5.2.3 (limited), C 2.8.3 (sufficient), and C 2.8.5 (extensive)..
19. Chaplains and social services personnel have been notified and have begun appropriate personnel sensitivity and cultural awareness training programs. (Note: Based on UJTL conditions C 2.2.3 (adequate), C 2.2.4 (partial), C 2.2.4.4 (good), and C 2.2.4.5 (normal)).
20. Information warfare and electronic warfare specialists have begun aggressive protection and COMSEC programs, as well as evaluation of potential Iranian C4I weakness for exploitation. (Note: Based on UJTL conditions C 2.3.1.8 (restricted) and C 2.4.5 (strong)).

21. Communications with host nation and a clear mandate has been published for the operation, included the desired end state and duration of the mission. The mandate may be based on international sanctions, or by invitation of the coalition partner nations. (Note: Based on UJTL conditions C 2.1.1 (clear), C 2.1.1.2 (strong), and C 2.1.1.3 (overt)).
22. Contact with US government on scene authorities (such as US consular officials and Ambassadors) have been established, to include gathering information for any potential Department of State Non Combatant Evacuation Operation (to include numbers and locations of American Citizens, special category employees, and personnel likely to be compromised by their close association with US persons or employment.). (Note: Based on UJTL conditions C 2.1.1.5 (cooperative), C 3.1.1.3 (strong) and C 3.1.2.1 (active)).
23. Appropriate Status of Forces Agreements with host nations and Rules of Engagement for the coalition forces have been established. (Note: Based on UJTL conditions C 2.1.1.4 (multinational) and C 2.1.1.5 (cooperative)).
24. Coordination for special mission and supporting CINC assets has been accomplished, for example, SPACECOM counter-TBM capabilities for tracking the potential SCUD-B threat. (Note: Based on UJTL conditions C 2.2.2 (multiple), C 2.2.5 (abundant) and C 2.7.3 (full)).
25. Force protection, security, and law enforcement procedures have been established. (Note: Based on UJTL condition C 2.7.1 (high)).

A.5. World Situation

The international political, social, and economic environments are under pressure, with access to energy resources playing an increasingly volatile role in evolutionary and, at times, revolutionary power struggles. These struggles are sustained primarily by economic dissatisfaction.

In the Middle East, radical fundamentalist religious groups have continued the pattern of fanning social and economic agendas to gain power and popular political support. Oppressive regimes, rising population burdens, and failing resources contribute to the failure of many governments to meet the needs of their people. These human needs have gained recognition with the advance of the information age and the international exposure that highlights the deep economic rift between the "haves" and "have-nots."

As a result of these factors, tensions are running high around the world. The United States has strategic concerns in many of the key hot spots -- in Asia with China and Taiwan, in the Middle East Arab-Israeli contentious zones, and in South Asia with Pakistan and India. Of immediate concern is growing instability in Iran and the Persian Gulf region. The potential threat to the flow of oil from the area, in particular through the Strait of Hormuz, is a vital interest throughout the world.

A.5.1. The Iranian and Gulf Crisis

A.5.1.1. Background

Since the Persian Gulf conflict of Desert Storm, Iran has been fraught with turbulence, both internal and external. The Iranian people have become disillusioned after nearly 20 years of Islamic Fundamentalist rule. The Mullahs and the Fundamentalist controlled Government relied upon the China paradigm to engineer rapid economic growth. This plan focused on building a strong popular base of support, initially capitalizing on promises of improving the standard of living for the burgeoning underclass.

A.5.1.2. Sociological/Economic Factors

The initial success of the first generation economic plan also diminished political and religious opposition. With internal popularity high, the government opted to defer social benefit programs; instead, it applied economic resources to strengthen its military position in the region. The armed forces have purchased sophisticated military equipment from Russia, and they have made arms purchases from China.

Iran's rapid economic growth model has faltered with the reentry of Iraq into the world oil market. The resulting competition has led to increased tensions between the two countries. The competition in the oil market provides a pressure release point to reduce internal political and religious demands by focusing on a long standing external threat.

A.5.1.3. Demographics of Resistance

In Iran the economy remains soft, living standards continue to decline and it is becoming more difficult for the present regime to control internal dissent by non-lethal means. Complicating this volatile situation, the Iranian youth population continues to grow at a very high rate. This sector of the population is troublesome to the regime as it is under employed and susceptible to criminal and anti-regime political activity.

A.5.1.4. Regime Agenda - Retain Power

Human intelligence reporting has revealed that the Iranian Islamic Consultative (Majlis) urged the President to deal with the internal crisis by adopting a very hard line domestically. The President has taken dual action – internally, through a revitalization of Fundamentalist interpretation of the Faith by purging creeping Western influence, and externally, by asserting Iranian power in the region. The combination of the actions is intended to divert public attention away from the nation's economic stagnation.

Internal Control. Reflecting the internal crackdown and surge of anti-western sentiment, European and Japanese energy firms operating in Iran have become increasingly uncertain of their continued freedom of operation and long term access to energy resources. Investment sponsors underwriting the advanced oil extraction technology expressed concern over rumors of impending nationalization by the Iranian Government. Iranian officials have denied any intent to seize foreign assets, but local Mullahs have begun harassing foreign workers and their families. Workers have encountered restrictions on local travel and movement of equipment. Family members have faced harsh enforcement of Islamic Law. Iranian shop keepers and suppliers have begun refusing service to foreigners, noting they will be fined for such contacts.

External Threats. The Iranian Government's initial external actions consisted of military reinforcement of the key islands in the southern Persian Gulf. This effort was explained to the Iranian public in a televised address. The strident Islamic Fundamentalist rhetoric enjoined the Iranian people to link arms in a shield against the threat of Iraq, the American infidels, and their lackeys in the Middle East. The President declared that endless Iranian efforts to resolve the dispute over the sovereignty of Abu Muse and the Greater and Lesser Tunb Islands have fallen on deaf ears. He expounded on the need for military strength to guarantee the safety of Iranian citizens on the islands. Tacitly, the Iranian island reinforcement was probably intended to remind the Gulf Arabs of Iran's presence.

A.5.1.5. Regional Military Action

The status quo in the region, centered on the agreements between Gulf Cooperation Council states and the western allies had effectively reduced Iran's regional influence, and served to stabilize oil prices at a level below that considered essential to sustain the Iranian economic paradigm. The Iranian Government determined a visible threat to oil resource access would best serve its interests and give the regime renewed regional voice. The Government controlled media has focused on the elite capabilities, unit training, and reinforcement activity on the islands.

Combat engineers have improved preexisting berms, water holding tanks, defensive fighting positions, airfield facilities, and bunkers. Troop strength has been increased and coastal artillery sites have been manned. Because of this action, the UAE protested to the United Nations. However, the protest has elicited very little reaction from the international community. This perceived lack of international interest encouraged the Iranian leadership to broaden their military activities in the southern Gulf.

A.5.1.6. International Shipping Provocations

Recently the Iranian Foreign Minister announced that Iran would begin to enforce the provisions of its 1993 Maritime Law, which provides that the waters between islands not more than 24 miles apart are Iranian internal waters. Passage of vessels through these waters would require Iranian permission. Specifically, the Foreign Minister's proclamation stated that any merchant shipping transiting within Iran's so-called "internal sea" will be boarded and expected to pay a 5% tariff on the cargo. Additionally, Iran stated that no foreign warships would be permitted to enter or transit through the "internal sea," and any attempts to do so would be met with force.

In the northern Gulf, the Iranians have reinforced the contested area of the Shatt al Arab territory. This resurgence of territorial claims was also heralded with Fundamentalist rhetoric. The Mullahs announced a Jihad and Allah's Call to avenge the dead of the eight year Iran-Iraq conflict. This direct challenge to the Iraqi Government has further heightened tensions in the Gulf region. Iraq is countering the Iranian action by moving their forces into the Shatt al Arab area. This movement has flamed the concerns of Saudi Arabia and Kuwait in particular. Overall, the region is primed with dissent, heightening the concerns of all the countries in the Persian Gulf area and the world community.

A.6. Scenario Events

The foregoing JSIMS scenario provides a general picture of the political, economic, and military situation in Iran. This situation is deteriorating to the extent initial pre-hostilities force deterrent options (FDOs) can be expected to be initiated by the National Command Authority. These initial FDOs will not be intrusive or provocative from a military perspective. The JSIMS scenario includes a sequence of events that evolve to trigger progressively more aggressive political decisions and military actions by the United States, its allies, and potential coalition states.

A.6.1. Escalation - Stages One Through Four

A.6.1.1. Stage One.

The Iranian Government continues issuing strong political and military escalation rhetoric simultaneously with efforts to revitalize nationalist fervor.

External Situation

Persian Gulf. The Iranian Media has actively broadcast coverage of the military buildup on the two Tunbs, Abu Musa, and Sirri islands. Iranian military forces continue to strengthen their defensive positions on the islands. The UAE has expressed grave concern regarding Iranian intentions in the Persian Gulf.

Iran-Iraq Border. Iranian military posturing on the Iraqi border continues, and the pace of the force build-up has increased. Two army divisions located at Bakhtaran have moved to defensive positions to the west and along the border. Special forces teams from the 23d Special Forces Division have reportedly made reconnaissance forays over the border into Iraq to coordinate with the Kurds in the northern region of Iraq.

Internal Situation

In spite of the Regime's efforts to control and divert public opinion, political and economic turmoil are growing.

Resistance. Regional political and economic differences are beginning to surface in intellectual and political resistance forums. Common citizens are voicing economic concerns as unemployment increases. The willingness of the population to express opposition is greater in northern Iran, as highlighted by a recent general strike in the city of Tabriz. People in this region are calling for greater regional political autonomy and economic choices.

Military Reliability. Reports of internal military disagreements and leadership purges are coming to the attention of the Iranian public as the Iraq-Iran border is being reinforced. Army personnel in particular recall the bitter carnage endured during the previous eight year war with Iraq. The belated efforts of the regime to portray the historic claims and conflict with Iraq as a Holy cause and declaration of its victims as Martyrs have been unable to erase the negative legacy.

A.6.1.2. Stage Two

Political, military, and terrorist activities accelerate.

Political. Official proclamations indicate a shipping tax will be levied and strictly enforced. The Government issued a demarche to the UAE demanding an immediate oil price increase. The rambling demarche further demanded refusal of passage to all U.S. flagged ships into the Gulf States ports and facilities and threatened any UAE asset found communicating or cooperating with a U.S. Navy ship in the Gulf.

Outward signs of organized political dissent in northern Iran are gaining momentum. The city of Tabriz is becoming the focal point for a rival political faction of government. The local leadership has taken control of local media and is aggressively demanding self rule status. There is intense friction in negotiations and contact with the current national regime.

World opinion is beginning to take on a negative shape toward the aggressive activities of Iran. The United Nations is coming under increasing pressure to react to the belligerent tone and escalating level of Iran's political and military actions in the Persian Gulf region.

The Government of Egypt has made extraordinary diplomatic efforts to defuse the volatile situation and has offered to facilitate a review and possible negotiations on the Iranian issues and claims. The Iranian Government has spurned the Egyptian efforts and denounced the Egyptian Government as a western puppet and traitor to Islam.

Military. The Iranian Government continues its belligerent military actions on the islands adjacent to the Strait of Hormuz. Patrol boats from the Iranian coast have been making provocative runs on shipping moving through the Strait of Hormuz. Reports of Iranian military abuses of UAE citizens on the island of Abu Musa are beginning to surface.

Terrorist. A terrorist group claimed to have placed a bomb in a hotel frequented by American oil business persons in Abu Dhabi, UAE. American and European citizens were among the casualties. Investigation into the incident revealed the group had trained in Iran and maintained links to the Iranian fundamentalist advisors. In addition, several high level members of the group were noted to have received Iranian travel permissions and financial support. The Iranian Government responded to these allegations by decrying them as yet another Western conspiracy and part of an international effort to discredit legitimate Iranian businesses in an effort to hold oil prices down.

A.6.1.3. Stage Three

Military. Iran has established the long threatened tariff on merchant shipping passing through the Gulf of Hormuz. Merchant ships have been boarded and the crews forced to pay the tax before proceeding. Three ships that did not respond to radio and semaphore warning were fired upon, forced to stop, and subsequently boarded. Crews have reported being searched, having their personal property and papers seized, and enduring aggressive responses to any form of resistance. Ships' crews unable or lacking means to render payment have been forced to remain anchored under guard, without resupply, until their parent companies were forthcoming with electronic transfer payment. Several flag line carriers and tanker companies have registered international protests over the contract delays and blackmail nature of the Iranian Navy's enforcement actions.

Coastal defense batteries have been activated all along the Iranian coast. Unannounced live fire exercises against towed targets have been conducted, often in close proximity to passing merchant shipping. Iran conducted a test firing of a SCUD B missile. The missile was launched from a mobile firing position near Teheran. The dummy warhead impacted in the Gulf of Oman. The firing was not announced, nor was a "Notice to Mariners or Airmen" provided by the Iranian Navy or the Government.

A.6.1.4. Stage Four

The situation portends activation of a combined United States, allied, and coalition military response at the major theater war (MTW) level.

Military. The Iranian Army has deployed its Theater Ballistic Missile Force from garrison locations to tactical hide sites. These positions are in the vicinity of prepared launch sites. Chemical warheads are also suspected of having been pre-staged near the SCUD firing positions. Iran's military is at the highest state of alert. National mobilization efforts are underway. Mining preparations are being observed in the Strait of Hormuz area. Submarines have been reported as deployed from known pier locations at Bandar Abbas and Bandar Beheshti.

International Incidents.

An American flagged tanker was fired upon, boarded, and the crew taken hostage. The ship was subsequently set on fire and is expected to be scuttled inside the Iranian 12 mile limit north of Jazereh-ye Forur Island in the ingress shipping lane.

An Egyptian flagged commercial cargo ship transiting off Abu Mase radioed a distress call and described hull damage indicating the ship had struck a mine. The crew was taken into custody by Iranian patrol forces and transported to the Island. The damaged ship was scuttled after supplies and some of its cargo were removed.

Political. The United States issued a formal international protest of the Iranian attack on the oil tanker and demanded the immediate release of the ship's crew. The Iranian Government responded by moving the hostages to the mainland and announcing preparations to try the American captain as a spy. The state controlled Iranian media broadcast images of cryptologic equipment and communications suites ostensibly described as being seized from the tanker.

The Egyptian Government issued an immediate protest and demand for the release of the ship's crew.

Iranian radio announced obtaining proof of the Egyptian Government's secretly cooperating with the United States to betray the faithful by placing American spies among the ship's crew.

Iran has withdrawn its Ambassador to the United Nations for emergency consultations. Government security forces have surrounded the Japanese Embassy and demanded oil royalty payments in lieu of unpaid shipping taxes. The Swiss Ambassador has reported that requests for the departure of Japanese Embassy sponsored dependents have been rebuffed.

Economic. Lloyds of London has declared the Strait of Hormuz a high risk area and tripled its insurance rates on commercial shipping bound through the Persian Gulf. Speculation on the

international oil market has generated crude oil price increases. Japan and Indonesia have reported spot shortages of refined petroleum products.

Environmental. The sinking of the U.S. oil tanker threatens to release a swath of crude oil into the Gulf. Regional concern for the protection of desalination facilities is paramount. Fresh water supplies in the region are estimated marginal. Loss of water production would exacerbate immediate health concerns and further destabilize the regional situation.

A.7. Operational Situation

A.7.1. Background

In response to this hypothetical scenario environment, planning guidance in the Joint Strategic Capabilities Plan (JSCP) will have directed the Commander-in-Chief, US Central Command (CINCCENT) to prepare operational plans for the Persian Gulf region. Because of the political, economic, and military volatility of the Persian Gulf region and because of its strategic importance, a fully developed operational plan would be ready for implementation. These war plans are developed within the context of the Joint Operations Planning and Execution System (JOPES) "deliberate" planning process in response to specific guidance in the JSCP. Fully developed plans include a Time Phased Force Deployment Data (TPFDD) file and corresponding supporting CINCs' plans.

In this hypothetical operational situation the plan would be assigned an exercise reference name under the existing OPLAN. The plan would be updated continually as events occur to maintain the plan in a "ready to execute" status awaiting a National Command Authority (NCA) execute decision. The plan concept includes five distinct stages: (1) prehostilities; (2) lodgment; (3) decisive combat and stabilization; (4) follow-through; and (5) posthostilities and redeployment. These stages support activities that constitute the five phases of war – mobilization, deployment, employment, sustainment, and redeployment.

CINC Campaign Plan: A Persian Gulf major theater war (MTW) campaign plan would exist for the region to link national strategic security objectives to the operational level joint task force (JTF) planning requirement. As a minimum this plan would include: (1) theater objectives; (2) CINC's mission statement; (3) concept of operations; (4) command and control arrangements; and (5) force allocation. In general this campaign plan embodies the combatant commander's strategic vision of the arrangement of related operations to accomplish theater objectives and the assigned mission. The following represents a skeleton campaign plan that would set the operational stage for a CINCCENT established joint task force (JTF) to conduct this MTW operation.

A.7.2. Theater Objectives

Theater objectives for this scenario follow:

- Assure access to strategic resources. In coordination with allies and friendly nations in the region, ensure continued, unimpeded access to the petroleum reserves in the Gulf area. In particular, prevent hostile forces from gaining control or threatening closure of the Strait of Hormuz.

- Ensure external security for friendly regional states. Foster programs to improve the defense capabilities of friendly nations in the region. Encourage the development of political and economic activities within, and cooperative security arrangements among, friendly nations in order to enhance regional stability. When directed, provide direct U.S. military assistance to deter attacks on or defend friendly nations from external threats.
- Develop plans to provide direct U.S. military assistance to deter attacks on friendly countries and, in the event that deterrence fails, defend them from external attack. These plans should address various levels of U.S. involvement, from logistics support only; to support of friendly regional forces by air, naval, and SOF forces; to employment of major U.S. ground, naval, and air forces.
- Ensure the security of the Strait of Hormuz from control or interdiction by hostile powers.
- Conduct routine naval operations to ensure the freedom of navigation through international waterways in the region and develop plans to respond to attempts by hostile powers to curtail or stop freedom of navigation in vital international waterways.
- Countering weapon proliferation, including active and passive actions and plans to counter effectively the military and political intimidation and war fighting activities of adversaries who possess weapons of mass destruction and missile delivery systems.

A.7.3. Mission Statement

When directed conduct military operations in the Persian Gulf operational area to prevent hostile forces from gaining and maintaining control of the international waterways in the Gulf region to insure continued free passage to and from the area, and to counter military intimidation and war fighting against allies and friendly nations. Should deterrence fail, conduct land, sea, and aerospace operations to counter the aggression and reestablish friendly force control and long term stability in the region.

A.7.4. Concept of Operations

The CINC Campaign Plan concept of operations would be segmented into the five stages as identified above. Representative strategic national, strategic theater, and operational level activities supporting these stages follows:

Stage 1 - Prehostilities: Actions in this stage include "adaptive planning" generated flexible deterrent options (FDOs) that focus on deterrent measures. These measures include political, economic, diplomatic, and military efforts to stabilize the situation in the region. USCENTCOM generated military FDOs include: (1) Increase readiness of in-place forces; (2) Upgrade the in-place force alert status; (3) Increase strategic and operational reconnaissance and intelligence collection efforts (including SOF missions); (4) Direct show of force by ordering deployment of the Army prepositioned sets (APS) and maritime prepositioning ships (MPS); deploying a CVBG to the region along with the deployed ARG/MEU, and an "advance force" JTF HQ element aboard a Navy command ship (LCC); moving Air Force tactical fighter squadrons and air command and control assets to bed-down positions in the region; bolstering command, control and communications in the area; and, upgrading the region's logistic posture.

Corresponding activities at the U.S. national level include initiating actions to form an international coalition to confront this hostile activity under United Nation sponsorship.

Stage 2 - Lodgment: Military actions in this stage include reestablishing the "rights of innocent passage" through the waterways in the Gulf; establishing lodgment areas in the region to support follow-on deployment of a decisive combat force; and a corresponding logistics support buildup in the event deterrence fails. If necessary, forcible entry operations will be conducted to establish lodgments for initial defensive and subsequent offensive operations and force expansion. This stage will also include increased reconnaissance and intelligence collection efforts and expansion of command and control facilities in the theater of operations. Pre-hostilities lodgment activities will include peacetime deployment to host nation air and sea ports in the event pre-hostility deterrent activities are warranted based on hostile force reactions to deterrent measures implemented in the first stage. In-theater forces will focus on defensive measures to secure lodgment areas and on providing operational security for the forces deployed in the region, to permit lodgment activities to proceed as planned to support the buildup effort.

Stage 3 - Decisive Force and Stabilization: The initial focus of this stage will be on a rapid buildup of joint forces' offensive combat capability. Force flow will be established to expand the offensive capability to a point where decisive combat operations can be initiated to defeat the enemy forces and reestablish stability in the Persian Gulf region. Once the buildup has been completed, joint forces will transition from a defensive posture and, when feasible, conduct combat operations in the land, air, and maritime areas of operation (AOs). Decisive action will focus on winning, as directed by the NCA, by controlling the enemy territory and population and by destroying the enemy's ability and will to continue the war.

Stage 4 - Follow-through: This stage will involve a synchronized theater-wide effort to bring military operations developed in the above stages to a successful conclusion. Activities include actions to ensure the political objectives are achieved and sustained. The main thrust of this effort will be to assure that the military and/or political threat will not resurface. This will be done by addressing long term requirements to secure an enduring stability in the Gulf region. Theater forces will be prepared to conduct peacekeeping operations and transition to operations in support of other governmental agencies or UN directed activities. The emphasis will be on war termination objectives as established by the NCA. Forces will conduct military operations that will not conflict with the long-term solution to the problems that initially generated the crisis.

Stage 5 - Post-hostilities and Redeployment: This stage will evolve from military combat operations and transition to operations associated with peacekeeping. U.S. forces will initially focus on preparing to reduce the scope of military involvement in the region. These forces can expect to transition from controlling the war effort to a role of providing support as in the context of a "supporting" command to a non-military organization. As military requirements for operational forces are reduced they will be phased out of the theater of operations. Redeployment will be phased to correspond with the operational situation. Combat arms beyond security forces will be redeployed first. Support forces can be expected to remain until region stabilization efforts are assumed by non-military agencies. At this point in the stage, total redeployment will be directed, concluding the CINC's mission.

A.7.5. Command and Control

Command relationships would be specified in the CINC plan. This plan would designate a joint task force (JTF) commander to provide command and control over the joint operational effort. Command authority would be specified for the JTF commander and, in this case, operational control (OPCON) would be delegated to the JTF commander. Command relationships for dealing with coalition and allied forces would also be detailed. The basis for the notional command and control relationships is as identified in the JTF organizational structure included at Figure A.4.2.

Control measures would be specified to establish bounds for the JTF in executing the mission tasks assigned. A key bounding measure is provided in the form of designated operational areas. These areas as designated for the CINC plan follow:

- **Theater of War** -- Persian Gulf Region including the countries of Iran, Iraq, Saudi Arabia, Qatar, United Arab Emirates, Oman, and Kuwait.
- **Joint Operations Area (JOA)** -- The area within the theater designated by the CINC in which the JTF will conduct military operations. The JOA includes land, sea, and airspace. This area includes the western area of Iran, eastern Persian Gulf area of Saudi Arabia, Kuwait, Oman, United Arab Emirates, the Persian Gulf, Gulf of Oman, and the sea approaches from the Arabian Sea.
- **Joint Special Operations Area (JSOA)** -- The land, sea, and airspace assigned to Special Operations Forces for operations by SOF units. The stage one JSOA includes the general area of the Hormozgan and the Zagros Mountains region of Iraq.
- **Joint Rear Area (JRA)** -- The area wherein the JTF facilitates the protection and operation of bases, installations, and forces that support combat operations in theater. Initial JRA is in Dhahran, Saudi Arabia and Diego Garcia, B.I.O.T. Other JRAs will be designated as the operation progresses through the various stages of the operation throughout the world. Areas where stage 2 lodgments are established can be anticipated for planning purposes to become JRAs as the operation progresses.
- **Area of Operations (AO)** -- Land, air, and sea area where land and naval forces operate within the JOA. They will not include the entire JOA, but include areas needed to control land, sea and air operations as the war effort progresses through the designated stages.
- **Area of Interest** -- Area within the theater in which the JTF commander has a general interest as activities in the area may impact on his operation. Of primary interest is the area in and from which the enemy can affect current or future operations.

A.7.6 Force Allocation

The CINC plan would allocate planning forces to conduct the operation. These forces would hypothetically be as designated in the JSCP for a Major Theater War (MTW) in the Persian Gulf Theater of Operations. These forces would identify the resources the JTF commander can expect to have available to conduct the operation if and when authorized for execution. A notional force allocation for this operation is included at Annex B.

A.8. Military Operations Other Than War (MOOTW)

The MOOTW scenario envisioned is a humanitarian relief mission subset of the major theater war scenario. It will focus on the exercise of a joint training audience nearing the conclusion of an assigned relief mission. Activities will center on preparation for closure, e.g., transition of the on-scene situation to civilian authority and military withdrawal operations.

A.8.1. Background

During the course of the MTW it comes to the attention of the international community that a minority ethnic faction in the JOA has been subjected to increasing physical and economic abuse by Iranian military forces, with the tacit approval of the Iranian Government. Members of the faction experience increasing difficulty in finding work, and many are discharged from positions they have held for several years. Methodical eviction of faction families from their homes begins, and rumors of summary executions start to circulate, some appearing in the international press. Historical religious and cultural variances from the Iranian majority provide the Iranian media with justification for the sanctions imposed by the military, but the Iranian media facade is not lost on the international press or the world community.

During the follow-through stage of the MTW, the JTF commander is alerted to prepare to provide security and support efforts by nongovernmental organizations (NGOs) and private voluntary organizations (PVOs) that have initiated relief activities on behalf of faction members. Subsequently, the JTF commander is directed to execute that mission, resulting in detachment of security and support forces to the area of interest to perform necessary security and support functions associated with the humanitarian relief operation.

A.8.2. Factors Affecting Mission Execution

- The relief operation is conducted amidst ongoing international negotiations to establish standards for the autonomy of the minority group, as a subset of a peace agreement.
- The signature of a peace accord includes provision of immediate elections in the minority dominated area of interest.
- International representatives note the need to conduct election training and monitoring in the contested area to ensure minority access and confidence in the electoral process. Elements of election results include decisions on self rule, autonomy, or continued minority representation within the ruling government.
- Successful elections and repatriation of minority displaced persons to their homes are essential conditions to the conclusion of the humanitarian mission (and larger MTW).

A.8.3. MOOTW Development Scenario Summary

Determination of the training audience will assist refinement of the MOOTW scenario and preparation of organizational relationships for replication in the JSIMS build. Unlike the standing OPLAN ready for execution and under continuing updates, MOOTW mission requirements often develop without existing plans or guidelines. The potential for use of JSIMS to quickly replicate real world circumstances - build and rehearse or study various alternative

courses of action could provide the users a unique and valuable tool for assessing and responding to high pressure situations.

A.9. Academic Seminar Training Scenario

Currently envisioned as a classroom training session for a school house audience or for an operational commander and staff, the academic seminar is the ideal forum for presentation and JSIMS facilitation of non traditional military missions. Such an event might include study of lessons learned in Somalia and Bosnia, followed by a JSIMS supported United Nations mandated mission. JSIMS training support would include replication of the United Nations entities and decisions relevant to the example scenario.

A.10. Conclusion

Use of development scenarios will facilitate the development and integration of JSIMS by providing an initial scope of effort which can grow to meet user requirements.

References:

JSIMS Functional Requirements Document, 20 November 1996

JSIMS Universal Capabilities List of 16 June 1997

JSIMS Operational Requirements Document, version 2.7, 18 June 1997

CJCSM 3500.04A "Universal Joint Tasks Lists" version 3.0, 13 September 1996

Naval Doctrine Command, "Naval Tactical Task List - Version 1.1, 30 September 1996

U.S. Army Training and Doctrine Command, Final Draft - "DA PAM 11-XX, Army Universal Task List", 14 March 1997

U.S. Air Force Task List at the Tactical Level of War, 4 April 1997

Defense Planning Guidance Illustrative Scenarios for Planning

Joint Warfare System Draft scenario of 18 June 1997

Sources:

Joint Pub 3-0, "Doctrine for Joint Operations" of 1 February 1995

Armed Forces Staff College Pub I (AFSC Pub 1), "The Joint Staff Officer's Guide, 1997"

Annex B – JSIMS Development Scenario Force

B.1. General

The following is a notional presentation of the forces allocated to CINCCENT for planning purposes. The forces presented would be designated in the Joint Strategic Capabilities Plan (JSCP). In a hypothetical environment the forces listed below will eventually be assigned to a JTF for operations in the JOA. Forces will be phased into the operation to support the operational concept. The following is a breakout of the forces expected to be deployed into the theater to meet operational requirements. N day is the the day that active duty units are notified for deployment/redeployment. C days are the days that active duty units deploy. M day is the day that reserve/air national guard units deploy.

Appendix (1) to Annex B: U.S. Forces

B.A1.1. In Place Forces - Major Theater War - Persian Gulf

The following forces can be expected to be in theater at the time the OPLAN is ordered executed by the NCA.

Army Forces

<u>Unit</u>	<u>Available Date</u>	<u>Location</u>	<u>Source</u>	<u>Component</u>	<u>Remarks</u>
APS 4a	Available	Kuwait	CENTCOM	Active	Brigade Set
APS 4b	Available	Qatar	CENTCOM	Active	Brigade Set

Air Forces

<u>Unit</u>	<u>Available Date</u>	<u>Location</u>	<u>Source</u>	<u>Component</u>	<u>Remarks</u>
Composite Wing	Available	Saudi Arabia	CENTCOM	Active	1 Sqdrn F-15s 2 Sqdrns F-16s

Naval Forces

<u>Unit</u>	<u>Available Date</u>	<u>Location</u>	<u>Source</u>	<u>Component</u>	<u>Remarks</u>
5th FLT SAG	Available	Arabian Sea	CENTCOM	Active	Note 1
Peleliu ARG	Available	Arabian Sea	CENTCOM	Active	Note 2, 15th MEU embarked
MCM-1	Available	Home ported, Bahrain	CENTCOM	Active	Rotational crews, operate with 5th Flt
Ardent and Dexterous					
VP DET	Available	Masirah	CENTCOM	Active	3 P-3C ,EP-3

Note: 1. Valley Forge SAG

Designation

Name

Capability

<u>Designation</u>	<u>Name</u>	<u>Capability</u>
CG-50	Valley Forge	2 SH-60 Lamps III
DD-968	Arthur W. Radford	2 SH-60 Lamps III
DD-969	Peterson	2 SH-60 Lamps III
DDG-72	Mahan	2 SH-60 Lamps III
MHC-53	Oriole	Mine Hunter
MHC-55	Pelican	Mine Hunter
MCM-8	Scout	Mine Countermeasures
MCS-12	Inchon	8 MH-53's Embarked
T-AO 202	Yukon	Oiler

Note 2. PELELIU Amphibious Ready Group (ARG)

<u>Designation</u>	<u>Name</u>
LHA-5	Peleliu
LPD-9	Denver
LSD-39	Mount Vernon
LSD-45	Comstock

15 th MEU embarked on PELELIU ARG

<u>Designation</u>	<u>Capability</u>
Battalion Landing Team 2/1	1 Infantry Bn, 12 AAV, 6 LAV, 6 M198
VMA-214	Six Harriers
HML/A	3 UH-1 N & 4 AH-1W
HMM- 164	12 CH-46, 4 CH-53
MSSG-15	

Coast Guard Forces:

<u>Units</u>	<u>Location</u>	<u>Available Date</u>	<u>Remarks</u>
Coast Guard Port Security	Bahrain and UAE	Available	4 16 ft and 2 110 ft boats

B.A1.2. Allocated for Planning - Persian Gulf Region

CINC/CENTCOM Staff:

<u>Parent Unit</u>	<u>Sub-Unit</u>	<u>Location</u>	<u>Available</u>	<u>Component</u>	<u>Remarks</u>
CENTCOM	HQ staff	CONUS	N+2, C+5	Active	

Army Forces:

<u>Parent Unit</u>	<u>Sub-Unit</u>	<u>Location</u>	<u>Available</u>	<u>Component</u>	<u>Remarks</u>
3rd Army	HQ 3d Army	CONUS	N+1, C+7	Active	
	HQ III Corps	Fort Sill, OK	N+2, C+30	Active	
	1st Mech Div	Germany	N+2, C+30	Active	1 Bde (Ft. Riley, KS)
	4th Mech Div	Fort Hood, TX	N+4, C+45	Active	
	1st Cav Div	Fort Hood, TX	N+4, C+45	Active	
	3rd Armd Cav	Fort Carson,	N+4, C+45	Active	

<u>Parent Unit</u>	<u>Sub-Unit</u>	<u>Location</u>	<u>Available</u>	<u>Component</u>	<u>Remarks</u>
Rgt	CO				
6th Cav Bde	Fort Hood, TX	N+4, C+45	Active		
III Corps Arty	Fort Sill, OK	N+4, C+45	Active		
504th MI Bde	Fort Hood, TX	N+4, C+45	Active		
89th MP Bde	Fort Hood, TX	N+4, C+45	Active		
31st AD Bde	Fort Hood, TX	N+4, C+45	Active		
13th CosCom	Fort Hood, TX	N+4, C+30	Active		
155th Cav Bde	Tupelo MS	N+2, C+30	Active		
MD Bde		N+2, C+90	Reserve Comp	FORSCOM	
Engr Bde		N+2, C+90	Reserve Comp	FORSCOM	
XVIII ABN Corps	Fort Bragg	C+4	Active		
Corps HQ	Fort Polk	C+4	Active		
2 ND Lt. Armd Cav Rgt	Fort Bragg	C+10	Active		
1st CosCom	Fort Bragg	C+2	Active		
525th Med Bde	Fort Bragg	C+2	Active		
44th Med Bde	Fort Bragg	C+2	Active		
18th Avn Bde	Fort Bragg	C+2	Active		
35th Signal Bde	Fort Bragg	C+2	Active		
16th MP Bde	Fort Bragg	C+2	Active		
20th Engineer Bde	Fort Bragg	C+2	Active		
108th AD Bde	Fort Bliss	C+2	Active		
XVII ABN Corps Arty	Fort Bragg	C+2	Active		
82nd Air Defense Bde	Fort Bragg	C+2	Active		
101st Air Assault Div	Fort Campbell	N+2, C+45	Active		
3rd Mech Div	Fort Stewart	N+2, C+45	Active		
10th Inf Div	Fort Drum	N+2, C+45	Active		

Air Forces:

<u>Unit</u>	<u>Location</u>	<u>Available</u>	<u>Component</u>	<u>Remarks</u>
HQ 9th AF	CONUS	C+4	Active	
ASOCC	CONUS	C+4	Active	Air Sector Operations Center
Composite Wing	CONUS	C+4	Active	1 Squadron F-15s/ 2 Squadrons F-16s
Fighter Wing	CONUS	C+4	Active	1 Squadron F-15s
AWACS Wing	CONUS	C+4	Active	16 AWACS
Fighter Wing	CONUS	C+10	Active	4 Squadrons A-10s
Fighter Wing	CONUS	C+4	Active	2 Squadrons F-15
Fighter Wing	CONUS	C+4	Active	3 Squadrons F-16
Fighter Wing	CONUS	C+6	Active	4 Squadrons F-15E

<u>Unit</u>	<u>Location</u>	<u>Available</u>	<u>Component</u>	<u>Remarks</u>
Fighter Wing	CONUS	M+30	Air National Guard	3 Squadrons F-15E
Bomb Wing	CONUS	C+4	Active	16 B-1s
Bomb Wing	CONUS	C+14	Active	16 B-1s
Bomb Wing	CONUS	C+4	Active	12 B-52s
Bomb Wing	CONUS	C+14	Active	12 B-52s
Stealth Wing	CONUS	C+4	Active	36 F-117s
Fighter Wing	United Kingdom	C+4	Active	54 F- 15s
Fighter Wing	Italy	C+4	Active	1 Squadron F- 16s
Fighter Wing	CONUS	M+30	Air National Guard	7 Squadrons F-16s
Fighter Wing	CONUS	M+30	Air Force Reserve	2 Squadrons F-16s
JSTARS Det	CONUS	C+4	Active	3 E-8 A/C
Det 11th Recon	CONUS	C+4	Active	4 Predator UAV
Det Surveillance	CONUS	C+4	Active	3 RC-135s; 2 U-2s
AMC Squad	CONUS	C+4	Active	10 KC-10
Refuel Squads	CONUS	C+4	Active	24 KC-135
AMC Squad	CONUS	C+4	Active	12 C-17
Airlift Squads	CONUS	C+4	Active	16 C-130

Navy Forces:

<u>Parent Unit</u>	<u>Sub-Units</u>	<u>Location</u>	<u>Available Date</u>	<u>Remarks</u>
5th Fleet TF 50		Bahrain		
TG 50.1	Task Force 50	Indian Ocean	N+3	Embarked Blue Ridge LCC-19
TG-50.2	Nimitz CVBG	Indian Ocean	N+2	Note 1
TG-50.3	Truman CVBG	Atlantic Ocean	N+20	Note 2
TG-50.4	Bataan ARG	Mediterranean Sea	N+7	With Truman TG/26MEU, Note 3
TG-50.5	Kearsarge ARG	Mediterranean Sea	N+7	In Work-up, Note 3
TG-50.6	Guam ARG	Norfolk	N+20	Ready ARG, Note 3
TG-50.7	MPSRON	Diego Garcia	N+6	Preposition Force
TG-50.8	ATF	Pacific Ocean	N+14	PhibGru-3
TG-50.9	MPSRON-3	Guam	N+10	Preposition Force

Note 1: Nimitz Carrier Battle Group (CVBG)

<u>Designation/Name</u>	<u>Designation/Name</u>	<u>Designation/Name</u>
CVN-68 Nimitz	CG-59 Princeton	CG-73 Port Royal
DDG-62 Fitzgerald	DDG-69 Milius	FFG-57 Reuben James
SSN-717 Olympia	SSN-752 Pasadena	AOE-10
PC-4 Monsoon (SOF support)	PC-5 Typhoon (SOF support)	CVW-9 (74 A/C: 14 F-14, 36 F/A-18, 4 EA-6B, 4 E-2C, 8 S3B, 4 SH-60F, 2 HH-60H, 2 ES-3A)

Note 2: Truman Carrier Battle Group (CVBG) will have similar size units and aircraft embarked to that described in the Nimitz Battle Group. One aircraft carrier with 74 aircraft, two cruisers, two guided missile destroyers, one guided missile frigate, two attack submarines, and an oiler.

Note 3: Bataan Amphibious Ready Group (ARG), Kearsarge Amphibious Ready Group (ARG) and Guam Amphibious Ready Group (ARG) will each have units and embarked MEU similar to that described in paragraph B.a.1 above.

Coast Guard Forces:

<u>Parent Unit</u>	<u>Units</u>	<u>Location</u>	<u>Available Date</u>	<u>Remarks</u>
TG-55.3	WHEC 715	Atlantic Ocean	N+20	CGC Hamilton
TG-55.4	WHEC 716	Mediterranean Sea	N+7	CGC Dallas
TG-55.2	WHEC 721	Indian Ocean	N+2	CGC Gallatin
TG-120	WMEC 911/901	Caribbean Sea	N+30	CGC Forward & Bear

Marine Corps Forces:

<u>Parent Unit</u>	<u>Sub-Units</u>	<u>Location</u>	<u>Available Date</u>	<u>Remarks</u>
I MEF		CONUS	C+2	Camp Pendleton, CA
CE	HQ I MEF	CONUS	C+2	Command Element
	9th Comm Bn (-)	CONUS	C+2	
	1st Radio Bn (-)	CONUS	C+2	
	1st ANGLCO (-)	CONUS	C+2	
GCE	H&S Bn (-) 1st MARDIV	CONUS	C+2	
	1st MarRegt	CONUS	C+2	
	5th MarRegt	CONUS	M+10	
	7th MarRegt	CONUS	C+2	MPS Fly in Echelon
	11 th MarRegt	CONUS	C+2	4 Arty Bns: 18x I 55tow
	3rd AAV Bn	CONUS	C+2	4 Cos: 208 AAVs
	1st LARBn	CONUS	C+2	4 Cos: 106 LAVs
	1st Tk Bn	CONUS	C+2	4 Cos: 58 M-1s
	1st Cbt Eng Bn	CONUS	C+2	4 Cbt CO's + I Eng Spt CO
	8th Tk Bn	CONUS	C+2	4 Cos 58 M-1s
	4th AAV	CONUS	C+2	2 Cos 102 AAVs
FSSG	HQ 1 st FSSG	CONUS	C+2	
	H&S Bn	CONUS	C+2	
	7th Engr Spt Bn	CONUS	C+2	
	1st Supply Bn	CONUS	C+2	
	1st Maint Bn	CONUS	C+2	
	7th MT Bn	CONUS	C+2	
	1st Landing Spt Bn	CONUS	C+2	
	1st Med Bn	CONUS	C+2	
	1st Dental Co	CONUS	C+2	
ACE	3rd MAW	CONUS	C+2	Cherry Point NC

<u>Parent Unit</u>	<u>Sub-Units</u>	<u>Location</u>	<u>Available Date</u>	<u>Remarks</u>
	Marine Air Control Group 38	CONUS	C+2	36 IHAWKS, 60 Avengers, 30 Stingers
	MAG-13	CONUS	C+2	60 AV-8B, 10 RPV
	MAG-16 & 39	CONUS	C+2	72 CH-46s 48 CH-53s
	MAG-11	CONUS	C+2	72 F/A-18C/Ds, 12 KC-130s, 6 EA-6B
	MAG-39	CONUS	C+2	54 AH-1W 27 UH-1N
	MWSG-2	CONUS	C+2	Logistic/ Maintenance
II MEF	II MEF (Forward) CE	LeJeune	C+2	Amphibious MEF (FWD), Camp LeJeune, NC
	HQ CO	CONUS	C+2	Camp Lejeune NC
	Det 2nd SRIG	CONUS	C+2	Camp Lejeune NC
	Det 8th Com Bn	CONUS	C+2	Camp Lejeune NC
	Det 2nd Radio Bn		C+2	
	Det, Intel Co		C+2	
	Det 2nd Force RECON	CONUS	C+2	Camp Lejeune NC
	Det 2nd ANGLICO	CONUS	C+2	Camp Lejeune NC
GCE	RLT-8		C+2	3 Infantry Bns, 1 Artillery Bn 18 M198s 2nd AAV Bn (-) 102 AAVs Tk Co 14 M-1s LAR Co 25 LAVs Cbt Eng Co
ACE	MAG-26		C+2	16 CH-53s 36 CH-46s 18 AH-1W, 9 UH-1N 12 AV-8B
CSSE	CSSG-5		C+2	Det, 8th Eng Bn Det, 2nd Maint Bn Det, 2nd Supply Bn Det, 2nd Med Bn Det, 8th Motor Transportation Bn Det, 2nd Landing Support Bn

Special Operations Forces (SOF):

<u>Parent Unit</u>	<u>Sub-Units</u>	<u>Location</u>	<u>Available Date</u>	<u>Remarks</u>
<u>Army SOF:</u>	HQ SOCCENT	CONUS	N+2, C+7	
	5th Special Forces Group (SFG)	CONUS	N+4, C+14	3 Battalions
	19th SFG	CONUS	M+30	National Guard
	4th Psychological Operations Group (POG) (-)	CONUS	HQ element N+7, C+21	Task organized, BN (-)
	96th Civil Affairs Battalion (CA BN) (-)	CONUS	LNOs N+7, C+14 Reserves M+60	Task organized
	160th Special Operations Air Regiment (SOAR) (-)	CONUS	N+7 to 14	MH-60/MH-47E
	75th Ranger Regiment	CONUS	N+4, C+14	1 Battalion
		CONUS	N+4, C+7	HQ functions
<u>Air Force SOF:</u>	21st Special Tactics Squadron (STS)	CONUS	N+4, C+7	
	20th Special Operations Squadron (SOS)	CONUS	N+4, C+7	MH-53J
	55th SOS	CONUS	N+4, C+7	MH-60G
	4th SOS	CONUS	N+4, C+7	AC-130U
	16th SOS	CONUS	N+4, C+7	AC-130H
	8th SOS	CONUS	N+4, C+7	MC-130E
	9th SOS	CONUS	N+4, C+7	MC-130P
	15th SOS	CONUS	N+4, C+7	MC-130H
		CONUS	N+4, C+7	HQ Element
<u>Navy SOF :</u>	SEAL Team 1	CONUS	N+4, C+7	Task organized
	SEAL Team 3	CONUS	N+4, C+7	Task organized
	SEAL Team 5	CONUS	N+4, C+7	Task organized
	Special Dive Vehicle (SDV)	CONUS	N+14, C+21	
	Team 1			
	Navy Special Boat Squadron (NAVSPECBOAT)	CONUS	N+14, C+21	Task organized

<u>Parent Unit</u>	<u>Sub-Units</u>	<u>Location</u>	<u>Available Date</u>	<u>Remarks</u>
RON) 1				
Special Boat Unit (SBU) 12	CONUS		N+14, C+21	Task organized (PC/MK-V/RHIB)
Det MRC 5 Unit	CONUS		N+7 to 14, C+14 to 21	

Appendix (2) to Annex B: Combined/Coalition Forces

B.A2.1. SAUDI ARABIA

B.A2.1.1. Saudi Land Forces

Ground Forces	Number	Remarks
Armored Brigades	3	M-1 Abrams and M60s mix
Airborne Brigades	1	
Infantry Brigades	5	
Artillery Battalions	8	
Anti-Tank Weapons	1,029	(TOW and Dragon)
Air Defense Systems		
I-HAWK	8 batteries	
Patriot	2 batteries	
Helicopters		
AH-64	72	
Major Equipment:		
Tanks	600	
Armored Personnel Carriers	1,000	(M-113, LAV and IFV)

B.A2.1.2. Saudi Air Forces:

Aircraft Type	Number	Remarks
Fighter, Interceptor, Ground Attack		
F-15C/D	98	
Mirage 2000	48	
F- 15E	48	
F- 16C	36	
Reconnaissance		
RF-5	24	
E-3	3	
Transport		
KC- 130	7	
KC-10	4	
UH-60	16	

B.A2.1.3. Saudi Navy Forces:

Ship Type	Number	Remarks
Missile Patrol Craft	11	
Frigates	8	

Mine Countermeasures	7
Patrol	29
Helicopters	
AS-365N	21
Helicopters	
AS-332B/F	12

B.A2.2. KUWAIT

B.A2.2.1. Kuwaiti Land Forces:

Ground Forces	Number	Remarks
Armored Brigades	2	M-1 Abrams
Mechanized Brigades	1	
Infantry Brigades		
 Major Equipment		
Tanks	373	
Armored Personnel Carriers	389	M- 1 13, IFV TOW, BNT-AT-3
Surface-to-Surface Missiles	18	MLRS
Anti-Tank Weapons	938	TOW/Dragon
Air Defense Systems		
Patriot	1 battalion	
Ground Forces	Number	Remarks
Rapier, Roland	10 launchers	
Avenger PAADS	18 launchers	
Helicopters		
AH- 1	24	

B.A2.2.2. Kuwaiti Air Forces:

Aircraft Type	Number	Remarks
Fighter, Interceptor, Ground Attack		
F/A-18C	40	
 Helicopter, Transport Misc.		
AH-64, SA-342	23	
SA-330, AS332	11	
UH-60S	16	
L-100	3	
DC-9	1	

B.A2.3. EGYPT:

B.A2.3.1. Egyptian Land Forces:

Ground Forces	Number	Remarks
Armored Brigades	2	M-1 Abrams
Infantry Brigades	3	

B.A2.3.2. Egyptian Air Forces:

Aircraft Type	Number	Remarks
F/A-16	40	2 Squadrons

B.A2.4. GULF STATES (BAHRAIN, QATAR, UAE, OMAN)

Forces are displayed in combined aggregate unless otherwise noted.

B.A2.4.1. Gulf States Land Forces:

Ground Forces	Number	Remarks
Armored Brigades	2	Various Older Models
Armored Regiments	2	
Artillery Brigades	2	
Artillery Regiments	4	
Field Artillery Regiments	1	
Infantry Brigades	3	
Infantry Regiments	9	
Mechanized Infantry Battalions	4	
Mechanized Infantry Brigades	1	
Tank Battalions	1	

Major Equipment:		
Tanks	354	
Armored Personnel Carriers	826	
Surface-to-Surface Missile Launchers		
Scud-B	6	
Anti-Tank Weapons	420	
Air Defense	158	
Helicopters	154	

B.A2.4.2. Gulf States Air Forces:

Fighter, Interceptor/Ground Attack	Number
Country	
Bahrain	24
Fighter, Interceptor/Ground Attack	Number
Qatar	12
UAE	34
Oman	27
Reconnaissance	8
Transport	48

B.A2.4.3. Gulf States Navy:

Ship Type	Number	
Missile Patrol Craft	19	
Frigates	2	
Patrol	50	
Corvettes	4	
Mine Countermeasures	14	7 Oman, 7 UAE

Appendix (3) to Annex B: Opposing Forces Order of Battle

B.A3.1. IRAN

B.A3.1.1. Land Forces:

Unit	Location	Remarks
58th Infantry Div	Tabriz	
40th Infantry Div	Tehran	
55th Parachute Div	Tehran	
23rd Special Forces Div	Tehran	
18th Armored Div	Qazvin	
77th Infantry Div	Mashed	
88th Armored Div	Bakhtaran	
64th Infantry Div	Bakhtaran	
28th Mechanized Div	Ahvaz	
84th Mechanized Div	Shiraz	
30th Infantry Div	Bandar Abbas	
451st Mechanized Brigade	Bandar Abbas	
478th Mechanized Brigade	Chah Bagar	
81st Armored Division	Zahedan	

B.A3.1.2. Air Forces:

Aircraft Type/Unit	Location	Number	Remarks
F-4E Squadron	Bandar Abbas	10 A/C	
MIG-29 Squadron	Bandar Abbas	10 A/C	
F- I 4A Squadron	Bandar Bushehr	10 A/C	
F-4E Squadron	Bandar Bushehr	10 A/C	
SU-27 Squadron	Bandar Bushehr	10 A/C	
F-5E/F Squadron	Shiraz	10 A/C	
SU-22 Squadron	Shiraz	10 A/C	
SU-27 Squadron	Shiraz	10 A/C	
P-3 Surveillance Sqdrn	Shiraz	3 A/C	
C-130 Transport Sqdrn	Shiraz	25 A/C	
SU-24 Group	Shiraz	30 A/C	
F-7 Squadron	Ahvaz	18 A/C	
F-6 Squadron	Ahvaz	16 A/C	
F-4E Squadron	Mehrabad (Tehran)	10 A/C	
RF-4E Recon Squadron	Mehrabad	10 A/C	
F-5E/F Group	Mehrabad	20 A/C	
MIG-29 Squadron	Mehrabad	20 A/C	
SU-25 Squadron	Mehrabad	20 A/C	
SU-24 Squadron	Mehrabad	10 A/C	
F-4E Squadron	Hamadan	10 A/C	
RF-4E Recon Squadron	Hamadan	5 A/C	
SU-22 Squadron	Hamadan	10 A/C	
F-5E/F Group	Tabriz	20 A/C	
MIG-29 Squadron	Tabriz	15 A/C	
MIG-23 Squadron	Tabriz	10 A/C	
F-5E\F Squadron	Dezful	10 A/C	
SU-24 Squadron	Dezful	10 A/C	

Aircraft Type/Unit	Location	Number	Remarks
F- I Mirage Squadron	Dezful	12 A/C	
F-14A Squadron	Esfahan	10 A/C	
SU-22 Squadron	Esfahan	10 A/C	
F- I Mirage Squadron	Zahedan	12 A/C	
SU-22 Squadron	Zahedan	10 A/C	

B.A3.1.3. Navy Forces:

Ship Type/Unit	Location	Remarks
Squadron Tareq Submarines	Bandar Abbas	3 Kilo Class Submarines
Squadron SSM Submarines	Bandar Abbas	3 Iranian Design
Yugo Submarines	Bandar Abbas	6 SSMs
Damavand Destroyer	Bandar Bushehr	1 ship
Alvand Frigates	Bandar Abbas	3 ships
Bayandor FSs	Bandar Abbas	2 ships
Houdongs	Bandar Bushehr	25 patrol craft
Kaman PGFs	Bandar Bushehr	10 craft
Chaho	Bandar Bushehr	3 craft
Kaivan Patrol Craft	Bandar Bushehr	3 craft
Parvin Patrol Craft	Bandar Bushehr	3 craft
Small Patrol Craft	Coastal Ports Throughout	213 craft
BH7 Hovercraft	Bandar Bushehr	4 craft
Landing Ships/Craft	Bandar Bushehr	24 assorted
Mine Countermeasures	Bandar Bushehr	2 ships

B.A3.1.4. Iranian Missile Forces:

Type	Launchers	Missiles	Range
SCUD B	24-36	300	320km
SCUD C	24-36	250	600km
NO DONG I	18-24	100	1300km
CSS - 2 SILKWORM	12	50	30nm